Geographic Information System-based Safety Analysis, Visualization, and Exploration Resource

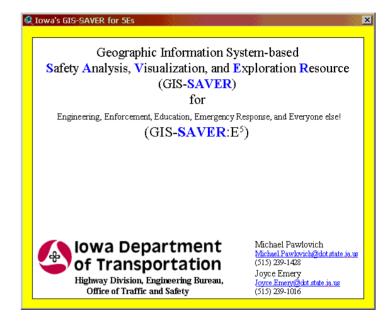
(GIS-SAVER)

for

Engineering, Enforcement, Education, Emergency response, and Everyone else!

(GIS-SAVER:E⁵)

September 17, 2002





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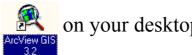
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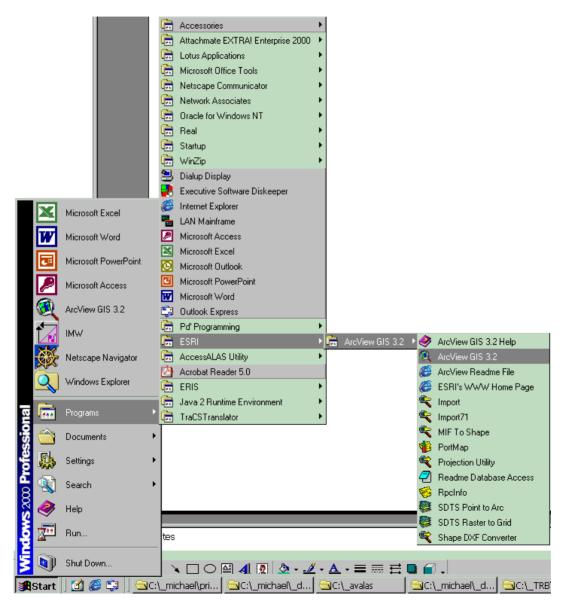
(515) 239-1016

Open ArcView using the ArcView GIS 3.2 icon on your desktop

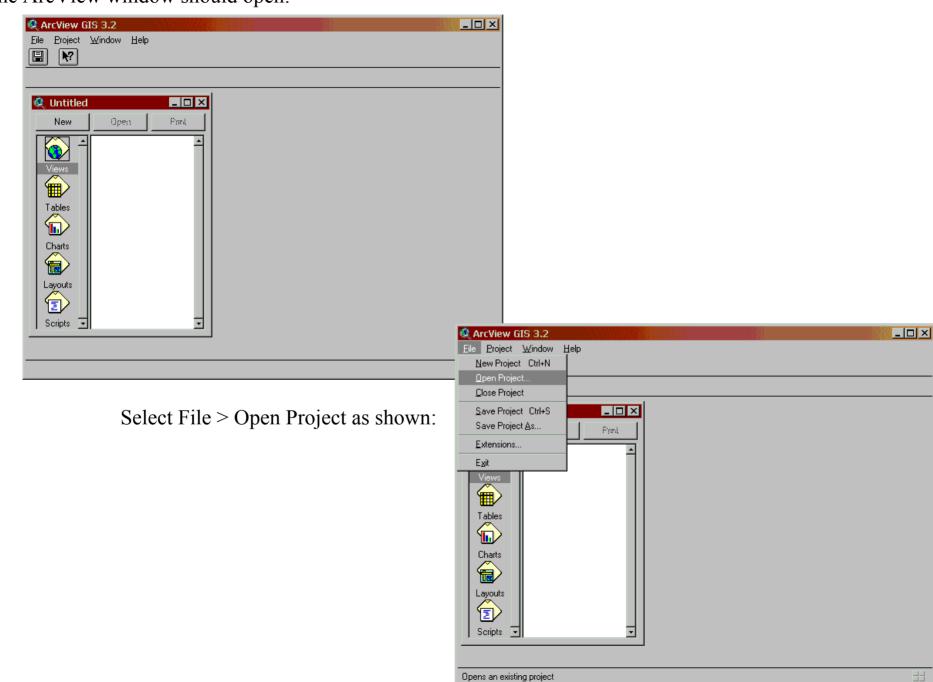


or, using the Start button in the lower left of your desktop, select Start > Programs > ESRI > ArcView GIS 3.2 > ArcView GIS 3.2 as

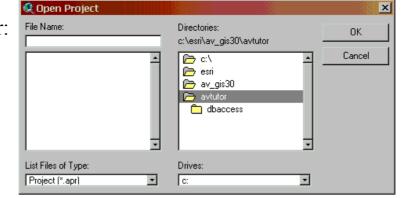
shown:



The ArcView window should open:



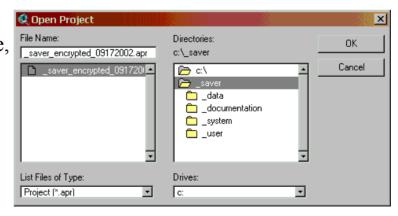
The Open Project dialog will appear:



Set the directory to "c:_saver\" by first double-clicking on "c:\" and then double-clicking on " saver":

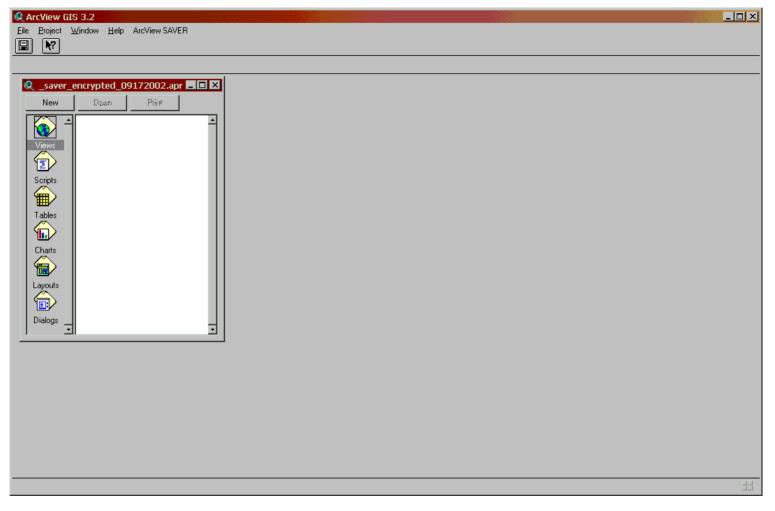


Click on the <u>latest version</u> of "_saver_encrypted_<date>.apr" (in this case, " saver encrypted 09172002.apr"):



The filename will appear in the box above. Click on the OK button.

The ArcView window will change, displaying the SAVER options:

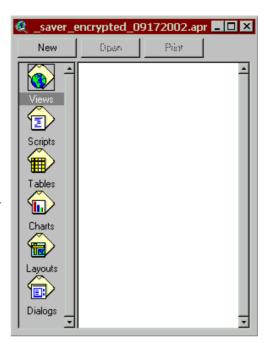


Initially, the SAVER project may appear on only a portion of your screen or, depending on your screen resolution, it may extend off the screen. To maximize the SAVER project, click on the maximize button in the upper right of the SAVER project screen. To save the project so that it will always maximize upon opening, click on the Save Project button.

Upon opening the SAVER project, two changes occurred:

1. The Project dialog changed name from "Untitled" to "_saver_encrypted_<date>.apr":

The Project dialog allows quick access to many of the documents in ArcView. However, in most cases when using SAVER, sticking with the dialogs (as discussed within this manual) is usually the best choice.



2. A menu item (ArcView SAVER) was added to the menubar:



Clicking on the ArcView SAVER menu exposes one menu option, Start SAVER:

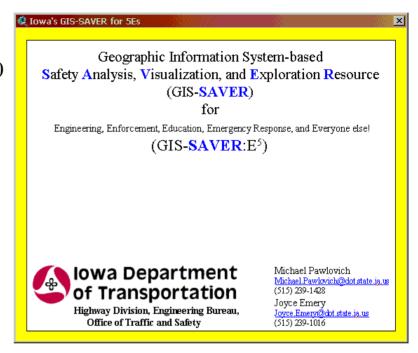


Selecting Start SAVER will produce a little bit of a wait the first time you do so each session. This is normal. The program is "cataloguing" the available data files so that, throughout the session, it only provides those choices that are available given the data on your computer.

Clicking on the Start SAVER option produces two results:

1. The SAVER logo screen appears:

The SAVER logo screen will remain for 10 seconds or until the Close button in the upper right of the logo screen is clicked.



2. The SAVER about screen appears:

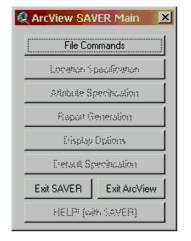
The about screen displays contact information for SAVER.



Click the Continue Continue button.

Clicking on the Continue button will cause the following dialogs to appear:

1. The Main dialog:



The Main dialog is the main operational dialog for all SAVER options. This dialog is the starting point for all SAVER operations.

BTW...The Project dialog box will remain open. This is okay. It isn't needed for SAVER operation but is useful for ArcView operations in general.

2. The Answers dialog:



The Answers dialog is the dialog which allows progression throughout the SAVER options and provides answers to SAVER options.

From this point a user may select from one of several options: select File Commands, Exit ALAS, Exit ArcView, Cancel the dialogs, or return to the Main Dialog (the current screens).

Before describing the File Commands selection, the other options will be described:

- 1. Exit ALAS Closes the SAVER project but leaves the ArcView window open.
- 2. Exit ArcView Closes ArcView.
- 3. Cancel Closes the dialogs but leaves the SAVER project open.
- 4. Main Dialog Returns to the Main dialog or re-opens the Main dialog.

Clicking on File Commands opens the File Commands dialog:

The File Commands dialog is, similar to a File menu for most software, the place from which to perform file operations, including opening, closing, saving, and creating new documents. Three options should be selectable at this point: New Map, Save Project, and Open Project.



Before describing the New Map option, the other options will be described:

- 1. Save Project Saves the SAVER project with the current settings. (Change the filename if you do this.)
- 2. Open Project Opens the open project dialog, allowing selection and opening of saved projects.

Clicking on New Map opens the New Map dialog:

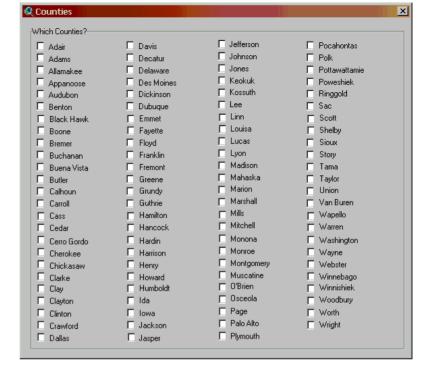


The New Map dialog provides opportunity for selection of available jurisdiction types – city, county, Metropolitan Planning Organization (MPO), Regional Planning Affiliation (RPA), Iowa Department of Transportation (DOT) District, Iowa State Patrol District, Statewide, and Corridor. Currently, only the County files are available.

Click on County.

Clicking on County results in the appearance of Counties dialog:

The Counties dialog will only display the counties loaded onto the computer.



and the Answers dialog changes as well:



To select a county or counties, click on the square(s) in front of the county name(s). All counties can be selected by clicking on the All button (not recommended as it will take a long time). The selection can be cleared by clicking the Clear button or clicking on checkboxes that have been selected.

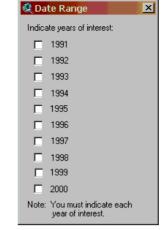
For example, Marshall and Story are selected here, indicating interest in opening these counties in one map View:



Select the county(ies) of interest and then click the OK button or the >>Next button on the Answers dialog.

Note: Selection of Marshall and Story is not required. However, all further examples will be run using these counties.

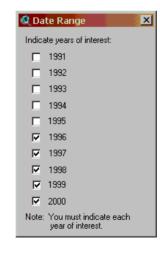
After clicking on OK or >> Next, the Date Range dialog will appear:



The Date Range dialog will only display the last 10 years worth of data loaded onto the computer.

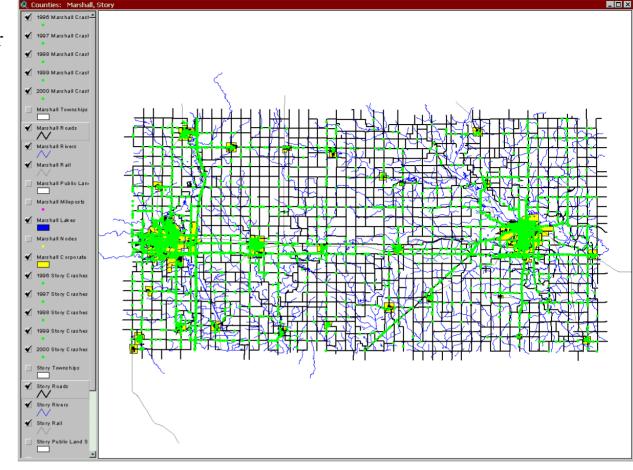
To select a year or years, click on the square(s) in front of the year(s). All years can be selected by clicking on the All button. The selection can be cleared by clicking the Clear button or clicking on checkboxes that have been selected.

For example, years 1996 thru 2000 are selected here, indicating interest in opening these years of data for the previously selected counties in one map View:



Select the year(s) of interest and then click the OK button or the >>Next button on the Answers dialog.

Note: Selection of these years is not required. However, all further examples will be run using these years. After selecting the years, the next window to appear should be a map or View (the ArcView term for a map):



Additionally, the Main dialog will reappear, with different options now available:

File Commands



And the Answers dialog will return to this state:



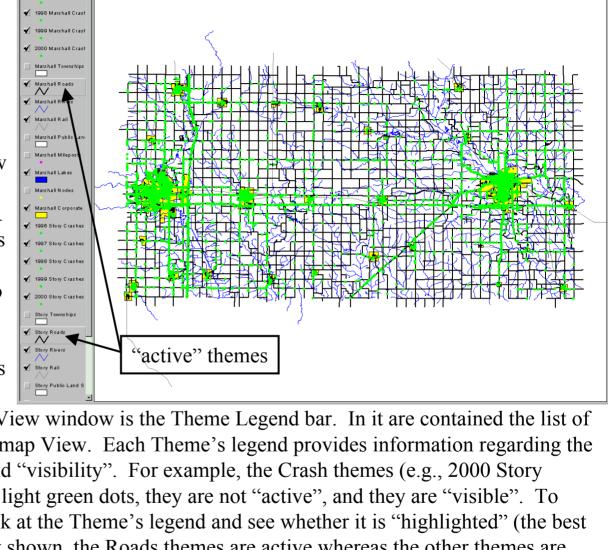
Before moving on, let's note some features of the View window. First, note that the menu GUI has changed. Previously, the menubar looked like:

Eile <u>P</u>roject <u>W</u>indow <u>H</u>elp ArcView SAVER

Now, it looks like:

Eile Edit ⊻iew Iheme Graphics Window Help ArcView SAVER TempQueryMenu

Notice that in addition to some ArcView specific menus (Edit, View, Theme, Graphics) there is an additional SAVER menu (TempQueryMenu). This menu is called this because it is a temporary location for the query abilities related to crash data. For now, use this menu and the items below for queries on crash data. More will be mentioned about this later.



Second, along the left-hand side of the View window is the Theme Legend bar. In it are contained the list of Themes or Layers contained within the map View. Each Theme's legend provides information regarding the Theme's color scheme, "activeness", and "visibility". For example, the Crash themes (e.g., 2000 Story Crashes) are represented on the map by light green dots, they are not "active", and they are "visible". To discern whether a theme is "active", look at the Theme's legend and see whether it is "highlighted" (the best word I have). For example, in the View shown, the Roads themes are active whereas the other themes are not. The Roads themes appear "raised" or have a different border around them. To set a theme active, click on the theme. To set multiple themes active, hold the **shift key** while clicking on themes. The checkmarks to the left of the theme names indicate whether a theme is being displayed. In this case, most of the themes are visible. To change a theme's "visibility", click on the box to the left of the theme name.

Counties: Marshall, Story

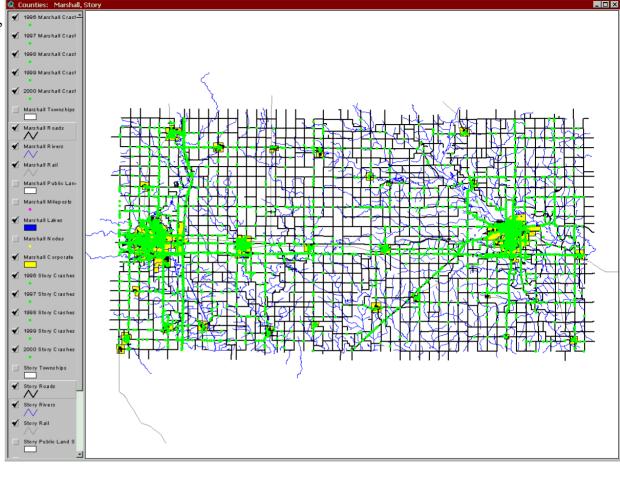
1996 Marshall Crast

- 1. Everything within SAVER operates on the Working View.
- All operations within SAVER that would apply to a View (e.g.,), only apply to the "working" View

At this point, it is important to clarify three concepts:

- (i.e., that View that has been declared by the user as the View to work with). That means that all pertinent button operations on the dialog boxes only apply to this "working" View. Therefore, setting display properties, identifying areas of analysis, counting crashes, queries, report generation, and stacking crashes all only operate on the "working" View. Creation of a new map creates a "working" View by default. Previously saved projects that are opened by the user must have their "working" View declared by the user. Use File Commands > Select Map to do this.
 2. Everything within SAVER operates on the Active Themes within the Working View. Similar to the above discussion, all operations within SAVER that would apply to Themes within a View
- Similar to the above discussion, all operations within SAVER that would apply to Themes within a View only operate on the Active Themes of the Active View. Again, all pertinent button operations on the dialog boxes only apply to the Active Themes, with the same list being applicable. This means that if 10 years of crashes are in the View but only 5 years of crashes are active, then only those 5 years that are active will be selectable, counted, queried, reported on, or stacked. This could have its uses but can also be potentially confusing.
- 3. Everything within SAVER operates on the Selection Set of the Active Themes within the Working View. Again, similar to the above discussions, all operations within SAVER that would apply to Selection Sets within Themes of a View only operate on the Selection Sets within the Active Themes of the Active View. Pertinent button operations on the dialog boxes only apply to the Selection Sets, with the same list being applicable. This means that for those Active Themes, queries, reports, counts, and stacking will only apply to the Selection Sets within those Active Themes. If no crashes are selected, nothing will be reported on, counted, or stacked. Queries could be applied but only as New queries on all crashes within the Active Themes.
- Now, that being said, it must be noted that it is understood that this might be less than clear at the moment. However, if these concepts are kept in mind throughout the rest of this manual, with helpful reminders interspersed, that understanding of SAVER operations will be magnified.

Again, starting from the last operation, with a View and two dialog boxes with additional options and assuming the desire is to work with the 5 years of crashes that have been opened...:



The Main dialog:



The Answers dialog:

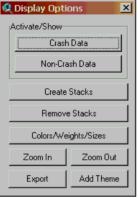


First, highlighting concept 1, the newly opened map View is the "working" View.

However, the Active Themes are not crashes but road layers. This means, at this point, that although ArcView's standard query button could be used to query the road layers, SAVER's buttons could not be used to query, count, report, or stack crashes. Therefore, we must set the crash layers active instead of the road layers. (FYI...the terms "themes", "layers", and "coverages" are somewhat interchangeable.)

To set the crash themes active, click on the Display Options button on the Main dialog. The following dialog

will replace the Main dialog:



This dialog is the Display Options dialog.

Also, note that the Answers dialog has an active << Back button now.

Choose crash data years to activate/inactivate or show/hide

1996

1997

1998

1999

2000

Visible

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The next step is to click on the Crash Data button within the Activate/Show control panel. Doing so produces the following dialog (the Crash Data: Active/Visible dialog): Crash Data: Active/Visible dialog): Crash Data: Active/Visible dialog):

the following dialog (the Crash Data: Active/Visible dialog):

Also, note that the Answers dialog has many additional active buttons now.



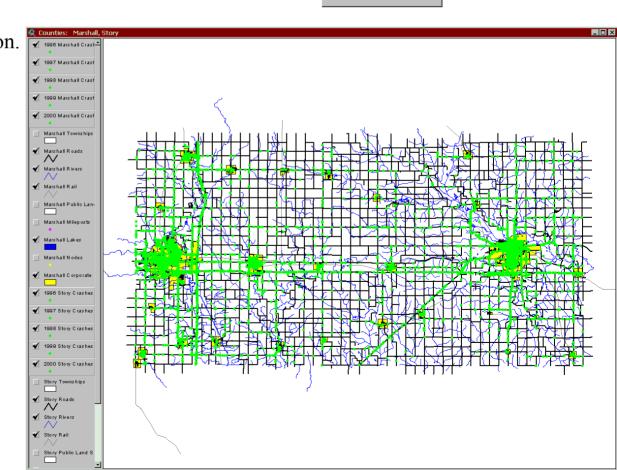
From the Crash Data: Active/Visible dialog a subset of the 5 years of crashes available can be activated by clicking on the checkboxes. Alternatively, clicking on the All button on the Answers dialog will set all the checkboxes selected. Click on the All button. All checkboxes are selected: Crash Data: Active/Vision National Control of the Cont

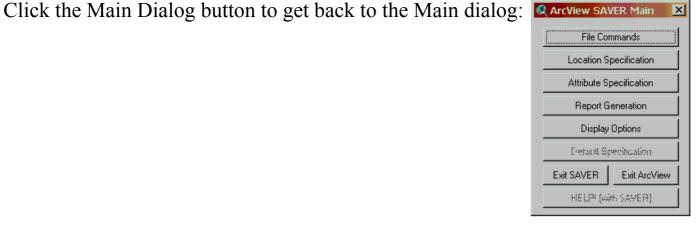
Choose crash data years to activate/inactivate or show/hide.

Active Visible

1996	
1997	
1998	
1998	
2000	
2000	

Now, click on the OK or >> Next button. The Active Themes in the "working" View are now the crash themes:





From here one of several things can be done. The manual will cover these in a particular order but understand that this order is arbitrary in that it need not necessarily be followed.

However, the first thing to do is define a Selection Set. This can be done in three ways, currently:

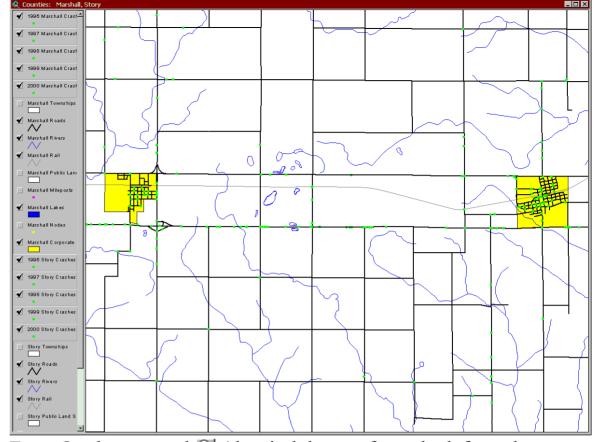
- 1. By using the ArcView Select Feature button tool (the fourth button from the left on the bottom row)
- 2. By querying the database, performing a new query
- 3. By selecting all crashes along a route, as defined by the crash database

Defining a Selection Set: Using the Select Feature Button Tool

To do the first, begin by clicking on the Select Feature button tool (holding the mouse pointer over the button will cause a pop-up window appear that says Select Feature). The Select Feature button tool should appear "depressed". Then move the mouse pointer over the View to the point at which you want to select.

If, at this point, you discover that you are not "zoomed in" far enough to adequately indicate your area of interest, you can use the ArcView ZoomIn button tool (the fifth button from the left on the bottom row) to define a zoom-to box. To this, select the ZoomIn button from the toolbar, move the mouse pointer over the View to a point near the point of interest, click and drag a box around the area of interst, and then release the mouse button. The View will ZoomIn, as shown on the next page...

Here the View is zoomed into US 30 between Colo (Story County) and State Center (Marshall County).



If you zoom in too close you can use the ZoomOut button tool (the sixth button from the left on the bottom row) to zoom out slightly. Click on the ZoomOut button tool, move the mouse pointer to the center of the View and click once. Don't click multiple times as ArcView tends to do weird things when this is done. If still not zoomed out far enough, click again. Don't click quickly.

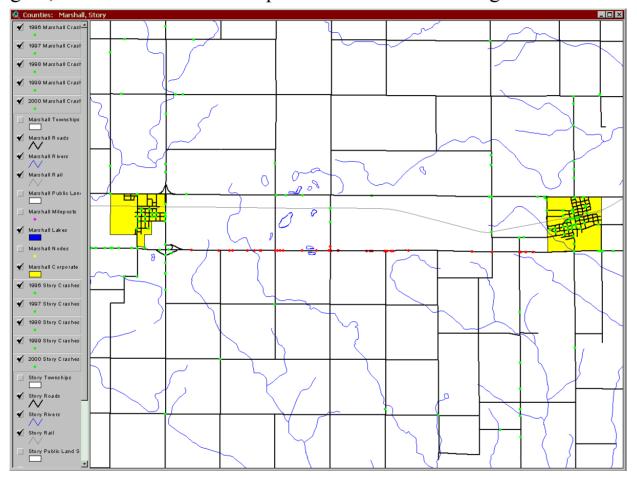
Alternatively, you can go to the View menu and select the Zoom Previous choice. This will return you to the zoom level previous to your having zoomed in or out.

Additionally, you can use the Pan button tool (the seventh button from the left on the bottow row) to move the View slightly up, down, left, or right. Again, to do this, click on the Pan button, move the mouse pointer to the View, click and drag in the direction you want to Pan, then release.

Also, you can use the Measure button tool to measure distances. The default measuring unit is set at miles. To change this, from the menu choose View > Properties. Change the Distance Units.

Now, back to selecting crashes...

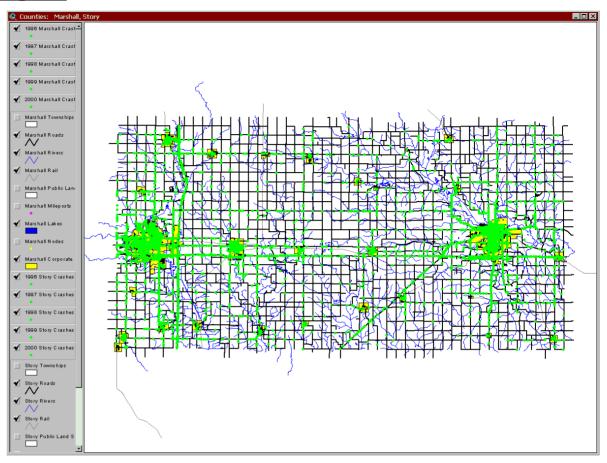
Click on the Select Feature button tool . Move the mouse pointer to one corner of the desired selection region (e.g., a length of segment or an intersection), click and drag the mouse pointer to the opposite corner of the region, then release. The crash points within the boxed region should turn red, as shown:



If your region is more complex you can hold the Shift key while selecting the crashes, creating several smaller boxed regions which will define the entire region. To assure that a previous selection is not retained it is advisable not to hold the Shift key as you make your first selection box.

Defining a Selection Set: The Query Option

If, instead, you wish to use the query ability of SAVER to define your selection set, begin at the point where you've just opened a map View and have set the crash layers active:



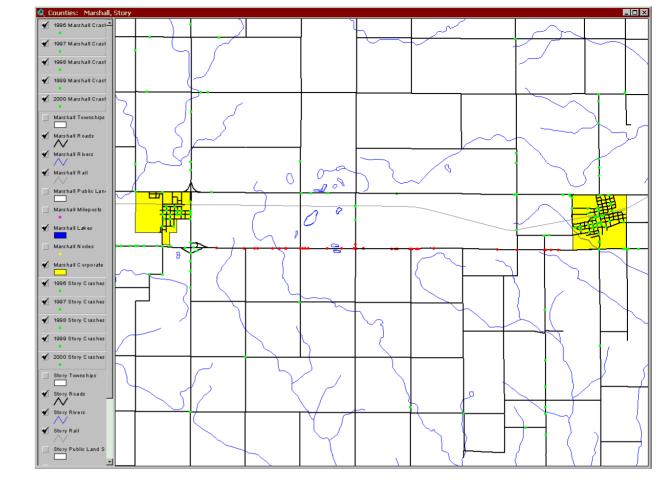
The Main dialog:



The Answers dialog:



Use the currently selected subset in the View (Colo to State Center or use the Select Feature tool to create another subset by selecting a specific region within the View:



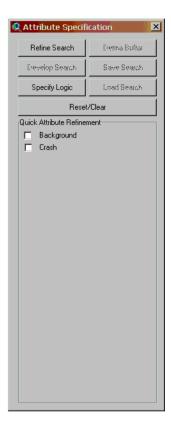
Please note that the crashes shown on this View are only those crashes that have been properly "located" over the years. Prior to year 2000, roughly 8-10% of the crashes were not properly "located". The 8-10% have been given points that place them in Nebraska or Kansas mapwise...to minimize the chance that they might be selected improperly. To view these crashes, from the menu choose View > Zoom To Selected. Then, to choose these crashes as well, simply encompass them in the Select Feature box. To return to the previous zoom level, from the menu choose View > Zoom Previous. However, for this example we are only choosing those crashes that have a valid location.

From the Main dialog, select the Attribute Specification button:



The Attribute Specification dialog appears:

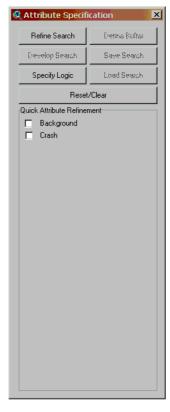
Note that this dialog is much bigger than it needs be at the moment and it may obscure the Answers dialog. This'll be remedied in future versions.



There are many types of operations that can be done from this point. However, keep in mind that for queries the more choices you select, the more complex the eventual query and the less crashes that are likely to fit the criteria.

Also, consider the fact that each of these categories has sub-categories. For the moment, you'll have to use educated guesses to determine what sub-categories are under each category...but a list will be established. Also, some query category/sub-category choices are not functional currently. Most work, however.

From the Attribute Specification dialog you can do several things:

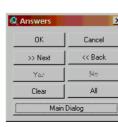


For now, let's concentrate on creating a query (or specifying attributes). There are two ways to do this but we'll concentrate on the one and mention the other a bit later as it is essentially the same.

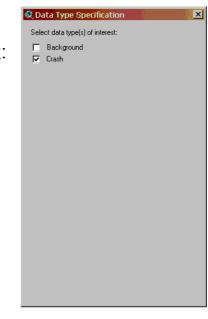
First, click on the Refine Search button. The Data Type Specification dialog appears:

This dialog lists the types of data currently available on your computer...Background and Crash. If you had enforcement data (such as ECCO, MOWI, VSIS) then Enforcement would be an option as well. Additional options (such as Enforcement) will come in near future versions of SAVER (est. pre-2003) provided you have TraCS local database data available.

BTW, the Answers dialog looks like:



At this time, only the Crash choice is viable, so select the Crash checkbox active and click the OK button on the Answers dialog:



The Data Type Category
Specification dialog appears:



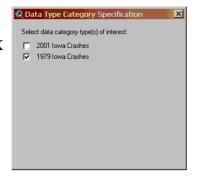
The Answers dialog looks the same:



The Data Type Category Specification dialog lists the categories of data under each data type (e.g., Background, Crash, Enforcement, etc.). As you can see, the available crash data categories are Iowa 2001 crash data format and Iowa 1979 crash data format. Other types that would be possible under this category are other states database formats (e.g., Illinois, Nebraska, etc.). Under the Background data types you might find categories such as road, river, rail, township, bridge, etc. Under the Enforcement data types you might find ECCO, MOWI, VSIS, etc.

Additionally, though it isn't operating that way currently, the only categories that would appear would be those that were currently available, through choices you'd have made previously.

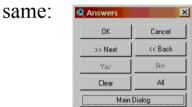
Select the 1979 Iowa Crashes checkbox and click OK on the Answers dialog:

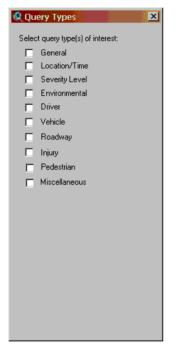


We're not selecting the 2001 Iowa Crashes checkbox for this example because we don't: 1) have any 2001 data open in our map and 2) therefore, we don't have any reason to do a query on 2001 data. You could go through the selection process but nothing would come of it. That's why, in future versions, the choice of 2001 data wouldn't come up.

Anyway, the Query Types dialog appears next:

And the Answers dialog looks the





The choices represented in this dialog are arbitrarily determined types of data which split the data into manageable subsets...creating an environment which allows the user to view only a subset of all the multitude of choices available.

Under each type, there are several additional options, as you'll see. For example, under Driver you will find Driver Age, Gender, Condition, License Restrictions, etc and under Vehicle you will find Vehicle Type, Year, Attachment, etc.

You'll become familiar with these after you use them but the future "real" manual will include a listing of the options under each type. Select the Driver and Vehicle checkboxes and click OK on the Answers dialog:

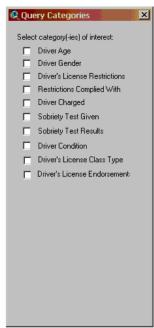


The Query Categories dialog appears with Driver subchoices or categories:

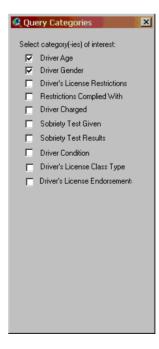
And the Answers dialog looks the

same:



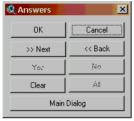


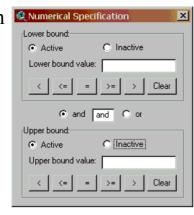
The Query Categories dialog will eventually reflect the fact that it is Driver Categories but all niceties haven't been added yet. Anyway, as you can see, the available choices reflect data attributes related to drivers. Select the Driver Age and Driver Gender choices and click the OK button on the Answers dialog:



The Numerical Specification dialog appears:

The Answers dialog changes: Answers





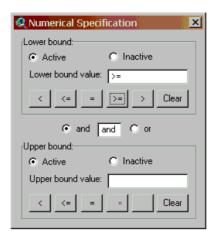
Again, in future versions, the words Numerical Specification will be replaced by something indicating that this is Driver Age. However, at the moment we must simply remember the order the previous dialog had our choices listed in.

The Numerical Specification dialog allows one to specify a range of values in which we are interested. For example, for Driver Age, we might be interested in those drivers between the ages of 15 and 24. Or maybe we are interested in drivers who are 65 and older. Perhaps we are interested in drivers under the age of 21. The Numerical Specification dialog allows all these options and more.

The major components of the Numerical Specification dialog include the Lower Bound control panel, the Upper Bound control panel, and the and/or specification radio buttons. Within each Bound control panel are radio buttons (Active and Inactive) which allow you to switch on or off that Bound, a text box that allows you to edit values, and several buttons that enable math operators to be inserted or cleared. BTW, some might be more familiar with the term "limits" or "extents" rather than "bounds".

Using the first example from above (drivers between 15 and 24), we'll step through specifying a value range.

First, within the Lower bound control panel, click on the ">=" button. The dialog will reflect this by: 1) inserting a ">=" into the Lower bound value textbox and 2) disabling the ">=" and ">" options in the Upper bound control panel:



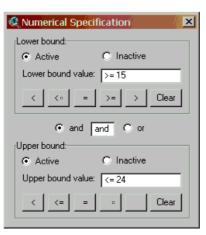
Second, click your mouse pointer to the right of the ">=" in the Lower bound value textbox, then type "15". The value should now read ">= 15":

Be sure there's a space between the ">=" and the "15".

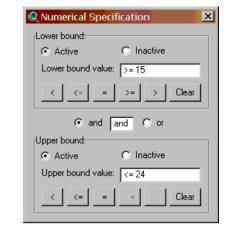


Now, follow similar steps to insert the "<= 24" into the Lower bound textbox:

Again, be sure there's a space between the "<=" and the "24".



Examining our choices, it can be remarked that this setup will result in a query of Driver Age >= 15 and Driver Age <= 24. This will result in crashes involving all drivers between age 15 and 24, inclusive, being selected from our crashes dataset. If we only wanted to select drivers <= 24 then we could select the Inactive radio button in the Lower bound control panel and vice versa if we wanted all driver over a certain age (e.g., 15 here, but that wouldn't make much sense normally). Additionally, we could change the and/or condition for appropriate queries, such as if we wanted crashes involving all drivers less than 15 or greater than 65 but no one in between.

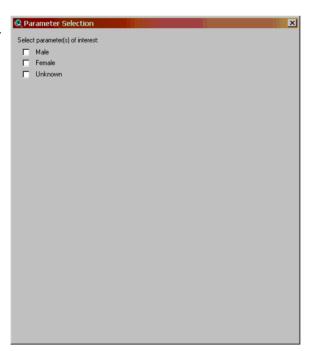


Finally, note that the words "crash involving all drivers less than 15 or greater than 65" are used. The queries select crashes (or whichever data type has been indicated), not individual attributes. Individual attributes will be sorted out during the Report Generation phase.

Click OK on the Answers button. The dialog for the next Query Category, Driver Gender, will appear:

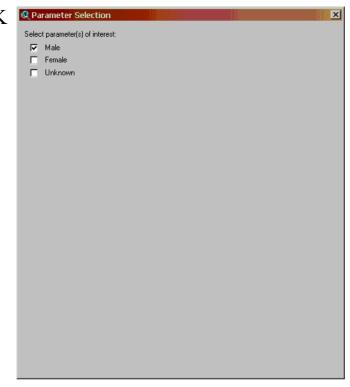
The Answers dialog changes:





Again, note that the words Parameter Selection aren't particularly descriptive. Future versions of SAVER will address this.

Select Male and click OK on the Answers dialog:



Now the Query Categories dialog appears but showing Vehicle categories:

And the Answers dialog looks the

Same:

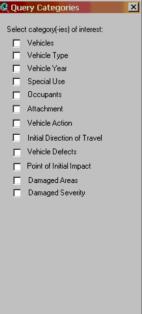
OK Cancel

Next < Back

Yex No

Clear All

Main Dialog



However, we can decide not to do Vehicle stuff at the moment. To do this, we'd select Cancel from the Answers dialog box.

Also, we could, if we wanted to change something in past selections, go back by selecting the << Back button from the Answers dialog box.

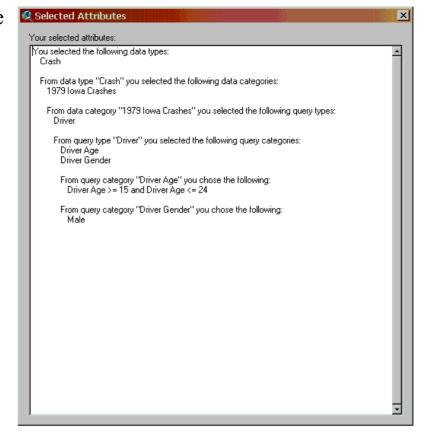
The Clear and All buttons function as they have in other dialogs.

For now, click the Cancel button.

Now, because Vehicle was the last selection we had made we progress to a report showing the options we had selected:

The Answers dialog changes: Answers





At this point we review our choices:

If they aren't quite what we wanted we could go back and change them. To do this currently, click on the Cancel or << Back buttons on the Answers dialog box. This will send you back to the Report Generation dialog box. Then progress back through the Refine Search process by clicking on the Refine Search button. The choices you made previously have been saved and will appear.

If we decide that we don't want these choices, then we could select Clear and our choices would be erased.

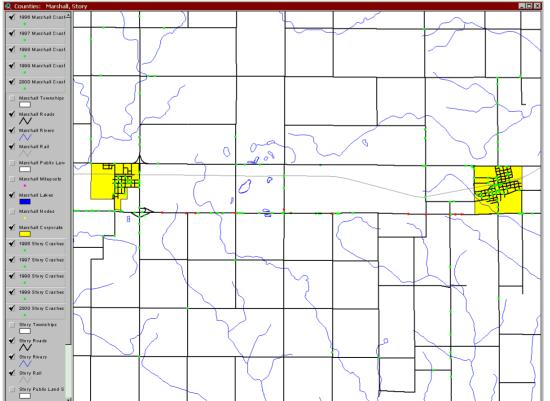
At this point, click the OK or >> Next button on the Answers dialog.

One final dialog, the Selection Type Specification dialog, will appear:



This dialog allows you to specify whether you want to begin a new selection set or whether you want to work with a current selection set. Let's use the current, US 30 from Colo to State Center selection set.

Just click on the Select from existing selection. radio button. The query will then run and, when done: 1) the Report Generation dialog will reappear and 2) your selection set will change:



There are far fewer red dots between Colo and State Center. This is your new subset.

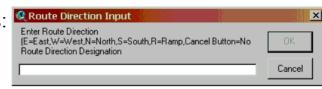
Use the Count Crash button under Location Specification to determine the numerical change.

Defining a Selection Set: The Route Selection Option

Return to the TempQueryMenu and select Route Selection (temporary):



The Route Direction Input dialog appears:



A direction can be input or, if direction designation is not wanted, click the Cancel button on this dialog. We will do the latter. (BTW...if a direction is input, the OK button becomes active and that must be clicked on.) The computer becomes busy...it is determining the routes available given the active crash themes. A list of

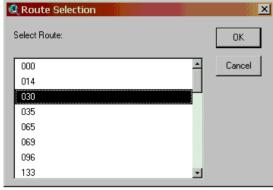
routes appears: Route Selection



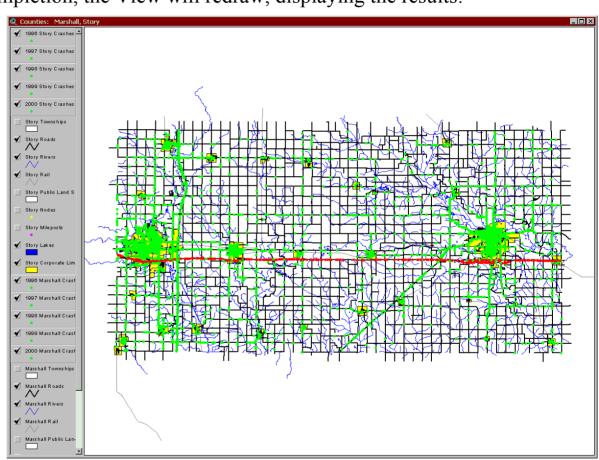
This list includes Interstate, US, and Iowa highways; municipal route designations; and county road names.

Pick 030 for US 30 through

Story and Marshall counties:



Click the OK button on this dialog. Again, the computer becomes busy and this is affected by the number of counties and years active. Upon completion, the View will redraw, displaying the results:

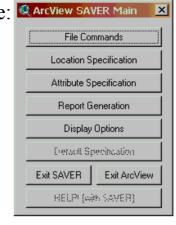


Reports, stacks, and counts can be done on this selection set, as discussed later in the manual.

Please note that this Route Select option only selects those crashes that have been indicated in the database to be associated with the route. If the database has incorrectly designated the route, which is quite possible, then the route selection will miss those crashes. Partial resolution of this issue is underway.

Now that a Selection Set exists, many other options are now available including counting, querying,

reporting, and stacking. The Main dialog should be available: ArcView SAVER Main



Beginning from the initial US 30 between Colo and State Center selection set, first a count will be obtained. This is accomplished by clicking on the Crash Location Specification button. The Crash Location

Specification dialog will appear:



And the Answers dialog will change:



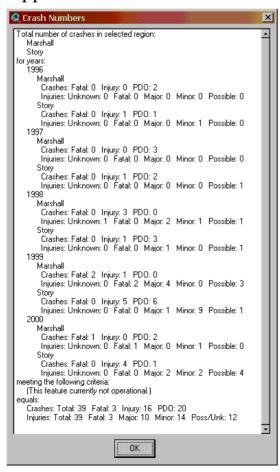
Click on the Crash Count button. The computer will become busy. The time this takes depends on the number of counties open, the number of years active, and the number of crashes selected. The more, in each case, the longer it'll take. However, it is producing a detailed report, by year and by county open, listing crash severity numbers and injury severity numbers. Non-zero values for any year or county are not reported. Thus, some years or counties might not get a reported value...these years or counties had no crashes selected.

When the count is complete, the following dialog appears:



Now, obviously, this doesn't show all the information. First, this will be improved in future versions. Second, you can move your mouse pointer to an edge or corner of the dialog and increase its size. The "Possible: 0" should appear on the line above behind "Minor: 0". Increasing the window size for this

selection results in: Crash Numbers



As you can see, a large amount of information has been produced. It happens that for these five years and for the region selected that crashes occurred in each county for each year. If, however, Marshall County had not had crashes in 1996, there would be no listing for Marshall County for that year. Also, note that a total for the entire selection set for all 5 years is listed at the bottom.

To save these results for a report or for your records, use the mouse pointer to select all the text in the box, as

shown:

```
Crash Numbers
        Crashes: Fatal: 0 Injury: 1 PDO: 1
        Crashes: Fatal: 0 Injury: 3 PDO: 0
                               OK
```

Now, on your keyboard, hold down the CTRL button and then depress the C button. Release both. You've just copied the text, placing it in the Windows Clipboard, available for pasting into another program, such as MicroSoft's Word. Open Word (or your equivalent) and select the paste option (usually found under the Edit menu). Alternatively, you can hold down the CTRL button and depress V...pasting the text. Save the file, etc.

BTW...both CTRL-C and CTRL-V are standard MicroSoft Windows key combinations...useable by most softwares within the MicroSoft environment.

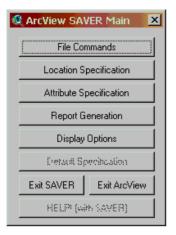
Anyway, whether you save it or just view it, when done click the OK button at the bottom of the dialog.

You'll be back at the Crash Location Specification window:



Generating Reports:

Begin at the Main dialog:

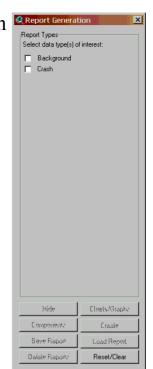


Click on the Report Generation button, the Report Generation dialog will appear:

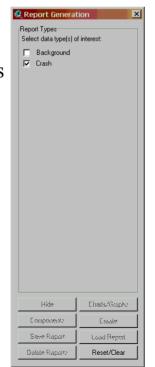
This dialog is very similar to the Attribute Specification dialog.

And the Answers dialog looks like:





Choose Crash from the list of checkboxes and click OK on the Answers dialog:



The Data Type Category Specification dialog appears:

And the Answers dialog looks the same: QANSWERS

 OK
 Cancel

 ⇒> Next
 << Back</td>

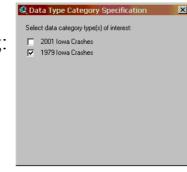
 Yes
 №

 Clear
 All

Main Dialog



Choose 1979 Iowa Crashes from the list of checkboxes and click OK on the Answers dialog:



The Report Types dialog appears, displaying 1979 Iowa Crash form report type options:

And the Answers dialog looks the same: QANSWERS





Based options (the Summary Reports are currently not functional) and click OK on the Answers dialog:

Choose the Case Based and Year



Case Based reports display the attributes of the selected crash records by case and have varying levels of detail, as indicated by their names.

Year Based reports display summaries of the selected crash records by year and by the selected attributes, as indicated by their names.

Additional "canned" reports will be available in future SAVER versions.

The Report Selection dialog appears, displaying the Case Based report types:

And the Answers dialog looks the

same:





Case Based reports display the attributes of the selected crash records by case and have varying levels of detail, as indicated by their names:

- The Accident Summary Sheet is a moderately detailed case based reports used mainly by TAS for ½% site specific application review.
- The Minimal report lists only the SAVER key field and the Iowa DOT case number. This report allows quick lookup of the original report forms.
- The Brief, Long, and Detailed reports increase the amount of information displayed, adding to that displayed by the Minimal report.
- The Injured Person report shows details about injured persons in each vehicle.
- The Vehicle Summary sheet shows details about vehicles.

For our example, select Brief and click the OK button on the Answers dialog:



The Report Selection dialog appears again, displaying the Year Based report types:

And the Answers dialog looks the

same:





For our example, select Collision Type Injury Summary Sheet and Major Cause Injury Summary Sheet and click the OK button on the Answers dialog:



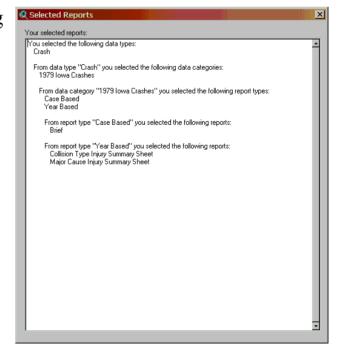
The Selected Reports dialog appears, reporting those reports that have been selected:

The Answers dialog

changes:



Review your selection and, if acceptable, click the OK button on the Answers dialog.



The Year-Based: Numerical or Textual dialog appears:

The Answers dialog changes: Answers





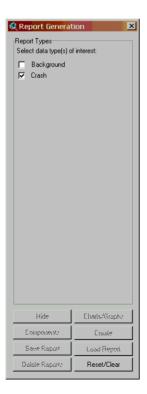
This dialog allows you to select whether you want the Year Based reports to display rows with zero values (Numerical) or not (Textual). The difference is explained on the dialog.

For our example, leave the Both radio button selected and click OK on the Answers dialog. The reports begin to be created. This may take a while, depending on the number of years being reported on, the number of crashes selected, and the number of reports selected.

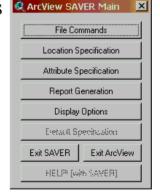
When done, the Report Generation dialog re-appears:

And the Answers dialog looks like:





To view the reports (at this time), go back to the Main dialog:



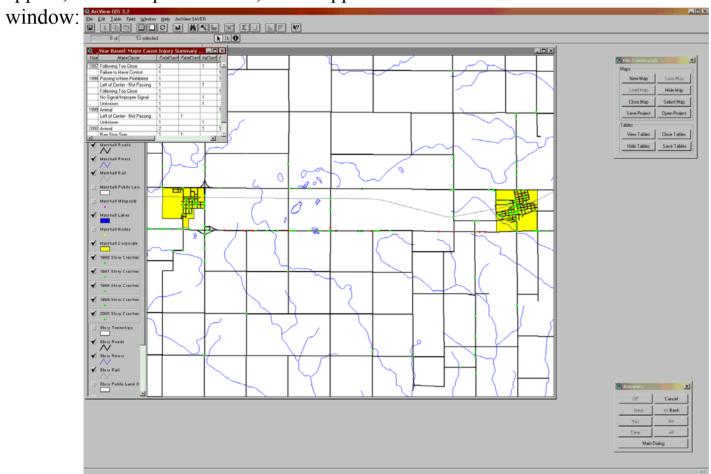
Then progress to the File Commands dialog:



Then click on the Show Tables button. Show Tables The Show Tables dialog appears:

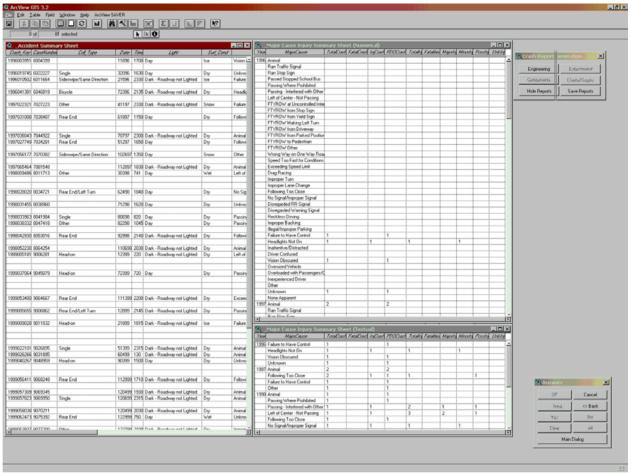


Select the desired tables and click OK. The selected reports will appear, one on top of another, in the upper left of the ArcView



You can use the mouse to rearrange the report windows.

Moving and resizing these, we obtain:



The left report, as indicated, is the Accident Summary Sheet. Not all columns are displayed but you can note that individual cases are listed, along with a subset of related information. Each case is indicated by the first two columns, Crash_Key (internal SAVER ID) and CaseNumber (DOT Case ID).

The upper right report is the Year Based Numerical Report on Major Cause. Note that many rows have no crash data associated with them. However, those rows that do have data in this table are also depicted in the Year Based Textual Report on Major Cause. The Textual report only list non-zero row values.

For discussion of the Case Based Report in more detail, reference the following visual:

	CaseNumbei	Coll_Type	Date Time		Surt_Cond	MajorCause	Day	TravelDir		Gender	Residence	Suit_Cond1	Dri_Veh1	PropDmg	1 Seventy
96003951 6	6004399		11896 1700	Day	Ice	Vision Obscured	Thursday	East	48	Female		Ice	Unknown	2700	
								East	48	Unknow		Ice	Vision Obscured		
96019745 6	6022227	Single		j Day	Dry	Unknown	Wednesda	West	39	Male		Dry	Unknown	500	
996010502 6	6011664	Sideswipe/Same Direction	21596 2330	Dark - Roadway not Lighted	Ice	Failure to Have Control	Thursday	East	50	Male		Ice	Unknown	7500	
								East	36	Male		Ice	Failure to Have Control		
96041381 6	6046819	Bicycle	72396 2135	Dark - Roadway not Lighted	Dry	Headlights Not On	Tuesday	East	71	Male		Dry	Unknown	475	Minor (Bruises/Abrasi
								East	40	Male		Dry	Headlights Not On		
97022321 7	7027223	Other	41197 2330	Dark - Roadway not Lighted	Snow	Failure to Have Control	Friday	West	56	Male		Snow	Unknown	4500	
							1	West	19	Male		Snow	Failure to Have Control		
97031008 7	7038487	Rear End	61897 1150	Dav Dav	Drv	Following Too Close	Wednesda	East	74	Female		Drv	Unknown	500	
					F			East	60	Female		Dry	Failure to Have Control	İ	
			†				<u> </u>	East	24	Male		Drv	Following Too Close	†	
97036043 7	7044922	Single	70797 2300	Dark - Roadway not Lighted	Dry	Animal	Monday	East	40	Female		Dry	Unknown	2100	
97027749 7		Rear End	51297 1650		Dry	Following Too Close	Monday	West	20	Male		Dry	Unknown	6500	Possible (Complaint
010211401	034201	riodi Erid	01201 1000	, coy	L L I	Tollowing Too Close	monday	West	23	Male		Dry	Following Too Close	10000	1 osabic (complaint
97056177 7	7070202	Sideswipe/Same Direction	102697 1350	7 D	Snow	Other	Sunday	East	52	Male		Snow	Other	2000	ļ
37000177	1010302	Sideswipe/Salile Dilection	102037 1330	r Day	SHUW	Urrei	Suriuay	East	54	Female		Snow	Unknown	2000	
97065464 7	7004540		112007 102	S I S I	n	Animal	Thursday	West	43	Male		Drv	Unknown	1000	
					Dry										
98009486 8	8011713	Other	30398 741	Day	Wet	Left of Center - Not Passing	Tuesday	East	59	Male		Wet	Unknown	17750	Major (Incapacitatin
			ļļ					West	20	Female		Wet	Left of Center - Not Passing	ļ	Major (Incapacitatin
							ļ.,.,.	West	47	Female		Wet	Unknown	4	Possible (Complaint
98028020 8	8034721	Rear End/Left Turn	62498 1840) Day	Dry	No Signal/Improper Signal	Wednesda		20	Male		Dry	No Signal/Improper Signal	8000	Minor (Bruises/Abra
								East	75	Male		Dry	Unknown		
98031455 8	8038960		71298 1620	Day	Dry	Unknown	Sunday	South	23	Male		Loose Gravel	Unknown	1000	Unknown
								West	57	Male		Dry	Unknown		
98033963 8	8041984	Single	80698 820	Day	Dry	Passing Where Prohibited	Thursday	East	22	Male		Dry	Passing Where Prohibited	7000	
98038332 8	8047418	Other	82298 1045	Day	Dry	Passing - Interfered with Other	Saturday	East	54	Male		Dry	Passing - Interfered with Othe	1000	Major (Incapacitatin
								East	38	Female		Dry	Exceeding Speed Limit		Possible (Complaint
98042930 8	3053016	Rear End	92998 2140	Dark - Roadway not Lighted	Drv	Following Too Close	Tuesday	West	48	Female		Drv	Unknown	3500	λ
			1		F			West	21	Male		Dry	Following Too Close	1	
98052230 8	R064254		110698 2030	Dark - Roadway not Lighted	Dru	Animal	Friday	Unknown	50	Male		Drv	Other	1000	
999005181 9		Head-on		Dark · Roadway not Lighted		Left of Center - Not Passing	Saturday	West	20	Male		Dry	Left of Center - Not Passing	38000	Fatal
33003101	3000201	Ticad on	12000 220	Dak Hodaway not Eight Ca	LUY	ECIT OF CORREST THOUT GOODING	Julianuay	East	43	Male		Dry	Unknown	30000	Major (Incapacitatin
			+				 	Lust	170	maic		- Diy	Olikilowi	 	Possible (Complaint
99037064 9	0045070	Head-on	72399 720	D	Drv	Passing - Interfered with Other	F. a.	East	77	Male		Drv	Passing - Interfered with Othe	10000	Major (Incapacitatin
333037064 3	3043073	neau-uri	72333 720	Day	Uly	rassing - intelleted with other	riluay	West	52	Male		Dry	Unknown	10000	
							 	west	102	male		Uly	Unknown	 	Major (Incapacitatin
			ļ					ļ				ļ		ļ	Fatal
	2001007		1,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		_		ļ., , , , , , , , , , , , , , , , , , ,		Eo.			<u> </u>		1.0700	Major (Incapacitatir
99053400 9	3064667	Rear End	1111399 2200	Dark - Roadway not Lighted	Dry	Exceeding Speed Limit	Saturday	West	56	Male		Dry	Unknown	16700	Possible (Complaint
								West	29	Male		Dry	Exceeding Speed Limit	ļ.,	Possible (Complaint
99005655 9	9006862	Rear End/Left Turn	12899 2145	Dark - Roadway not Lighted	Dry	Passing Where Prohibited	Thursday	West	25	Male		Dry	Unknown	1000	Minor (Bruises/Abra
			ļ					West	37	Male		Dry	Passing Where Prohibited		
99009028 9	9011032	Head-on	21899 1815	Dark - Roadway not Lighted	Ice	Failure to Have Control	Thursday	West	21	Female		Ice	Unknown	20000	Minor (Bruises/Abra
								East	32	Female		Ice	Failure to Have Control		Minor (Bruises/Abra
															Minor (Bruises/Abra
															Major (Incapacitatir
99022101 9	9026895	Single	51399 2315	Dark - Roadway not Lighted	Dry	Animal	Thursday	West	26	Male		Dry	Unknown	1000	
99026266 9				Dark - Roadway not Lighted		Animal	Friday	West	21	Male		Dry	Unknown	1000	
99040267 9		Head-on	90399 1500		Dry	Unknown	Friday	East	24	Male		Dry	Unknown	1000	Minor (Bruises/Abra
					l		1	West	61	Male		Dry	Unknown	1	Minor (Bruises/Abra
			1 1		İ		İ	†				1 1		1	Minor (Bruises/Abra
99056411 9	9068248	Rear End	112999 1710	Dark · Roadway not Lighted	Dru	Following Too Close	Monday	West	41	Female		Dry	Following Too Close	1000	(DIGIOUS ANDIE
3533041113	5050240	riour EIIQ	112333 1710	. Jan. Hodaway Hot Lighted	+=-/	- Secretary 100 close	oriday	West	54	Male		Drv	Unknown	1,000	<u> </u>
99057309 9	000034E		120499 1020	Dark - Roadway not Lighted	Deu	Animal	Saturday	East	71	Male		Dry	Unknown	1000	
99057823 9		Cinala				Animal		East	45	Female		Dry	Unknown	1000	Minor (Bruises/Abra
UUUU7023 3	JUUJJJJU	Single	120000 2315	Dark - Roadway not Lighted	עוט .	Ariina	Monday	L dSt	40	remale		עוט	UNNIOWII	1000	
	0.070044		1,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				ļ	ļ				1		1	Minor (Bruises/Abra
99058038 9				Dark · Roadway not Lighted		Animal	Saturday	West	31	Male		Dry	Unknown	1000	
99062473 9	9075392	Rear End	122999 750	Day	Wet	Unknown	Wednesda		25	Male		Wet	Unknown	1000	Possible (Complain
								East	34	Male		Wet	Unknown		
		Othor	1 1 2 2 7 0 0 2 1 2 2	North Doodman not Linkton	Dr.	Impropor Lano Chango	Monday	Enak	E0.	Misla		Des	Habaana	1000	1

As mentioned, the left most 2 columns indicate the beginning of a case. Note that the rows below some of the values in this column are blank. These rows reference the case number above them. The rows are blank because the first few columns of this report list only crashwide information, such as date, time, light, etc. This information is only reported once per crash. Further to the left, you'll notice that the rows with blank information to the left have information in them. This information is either vehicle/driver specific information or injury information. Additional rows are created for each instance of this additional information. Thus, a single vehicle crash with up to one injured person will only be listed on one row. Otherwise, multiple rows will be required depending both on number of vehicles and number of injured.

For discussion of the Year Based Reports in more detail, reference the following visuals:

Numerical:

-	Major Cause Injury Sum MajorCause				FD0Cianh	T-I-X	F-1-DC-	11	10 mart	D	_ 0
Yea		/ Uratiran	Parattratin	myeran	rvvuisin	100007	rarances	Majum	MERKEN	PERSON	Unkin
1996	Animal										
	Ran Traffic Signal										
	Ran Stop Sign										
	Passed Stopped School Bus										
	Passing Where Prohibited										
	Passing - Interfered with Other										
_	Left of Center - Not Passing					_					
_	FTYROW at Uncontrolled Inter					_					
_	FTYROW from Stop Sign		_	_		-	_	_			
						-					
_	FTYROW from Yield Sign	_					_				
	FTYROW Making Left Turn										
	FTYROW from Driveway										
	FTYROW from Parked Position										
	FTYROW to Pedestrian										
	FTYROW Other										
	Wrong Way on One Way Road										
	Speed Too Fast for Conditions										
	Exceeding Speed Limit										
	Drag Racing										
_	Improper Turn		_	_		_					
	Improper Lane Change					-					
_	Improper Lane Change					_	_	_			_
_	Following Too Close					-					
	No Signal/Improper Signal										
	Disregarded RR Signal										
	Disregarded Warning Signal										
	Reckless Driving										
	Improper Backing										
	Illegal/Improper Parking										
	Failure to Have Control	1			1						
_	Headights Not On	1		1		1			1		
_	Inattentive/Distracted			-		-		_	-		
_	Driver Confused			-		-					
_	Vision Obscured	1	_	-	1	-		_			
_		-		-		-					-
_	Oversized Vehicle			_		_					
_	Overloaded with Passengers/0										_
	Inexperienced Driver										
	Other										
	Unknown	1			1						
	None Apparent										
1997	Animal	2			2						
	Ran Traffic Signal										
	Ran Stop Sign										
	Passed Stopped School Bus										
	Passing Where Prohibited										
_	Passing - Interfered with Other			-		-					
_	Left of Center - Not Passing					-					-
_		_	_	-		-	_	_	_	_	
_	FTYROW at Uncontrolled Inter					-		_	_		
	FTYROW from Stop Sign										_
	FTYROW from Yield Sign										
	FTYROW Making Left Turn										
	FTYROW from Driveway										
	FTYROW from Parked Position										
	FTYROW to Pedestrian										
	FTYROW Other										
	Wrong Way on One Way Roa										
_	Speed Too Fast for Conditions										_
_	Exceeding Speed Limit	-			-	_					
	Drag Racing					-					
	Improper Turn										
	Improper Lane Change										
	Following Too Close	2		1	1	1				1	
	No Signal/Improper Signal										

Textual:

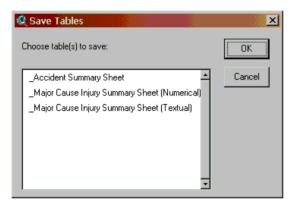
Year	MajorCause	TotalCrash	FalalOach	In Craul.	PDDDOsel.	Totalin	Falalties	Majority	Minada	Fixedry	Unkh
1996	Failure to Have Control	1			1						
	Headlights Not On	1		1		1			1		
	Vision Obscured	1			1						
	Unknown	1			1						
1997	Animal	2			2						
	Following Too Close	2		1	1	1				1	
	Failure to Have Control	1			1						
	Other	1			1						
1998	Animal	1			1						
	Passing Where Prohibited	1			1						
	Passing - Interfered with Other	1		1		2		1		1	
	Left of Center - Not Passing	1		1		3		2		1	
	Following Too Close	1			1						
	No Signal/Improper Signal	1		1		1			1		
	Unknown	1		1		1					1
1999	Animal	5		1	4	2			2		
	Passing Where Prohibited	1		1		1			1		
	Passing - Interfered with Other	1	1			4	1	3			
	Left of Center - Not Passing	1	1			3	1	1		1	
	Exceeding Speed Limit	1		1		2				2	
	Improper Lane Change	1			1						
	Following Too Close	1			1						
	Failure to Have Control	1		1		4		1	3		
	Unknown	2		2		4			3	1	
2000	Animal	2		1	1	2				2	
	Ran Stop Sign	1	1			2	1		1		
	Speed Too Fast for Conditions	1		1		2			1	1	
	Following Too Close	1			1						
	Failure to Have Control	3		2	1	4		2	1	1	

Only a portion of the Numerical report is shown whereas the entirety of the Textual report is shown. As is evident, the Textual report is, many times, much briefer than the Numerical report. This facilitates printing. However, as SAVER does not total the years at this time, the Numerical report facilitates the use of a spreadsheet for this purpose (creating a formula and copying it is much easier). Also, if graphs and charts are desired, again within a spreadsheet, the Numerical option is probably best. Again, this ability will be part of SAVER at some point.

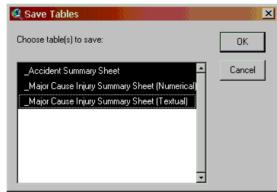
To save the reports, select the Save Tables option from the File Commands dialog:



The Save Tables dialog appears:

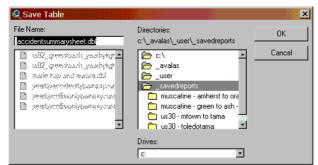


Select a subset of these. All have been selected here:



Click the OK button on this dialog.

The Save Tables dialog appears:



This dialog provides a default name and a default save directory. Change the name and directory if you desire. You can see that on my computer I have subdirectories related to particular requests.

Click the OK dialog on this dialog when you have set the name and directory as desired. The Save Selected Records Only dialog appears:



Note that the default is No. Unless you have made a selection within the reports that you wish to save, click on No. A selection within a report might be made if some bit of striking or noteable information was desired. At this point, making selections requires some knowledge of ArcView. It is advisable for most users, at this point, to click No.

These two dialogs will reappear for each report that has been selected from the Save Reports list.

Additionally, if you have saved previous reports of the same type and have not changed their names or moved them into subdirectories, you will be asked if you want to overwrite the existing file. Be Careful! Rename the file if you don't want to overwrite.

Now that reports have been covered, ArcView SAVER Main click on the Main Dialog button on the Answers dialog. The Main dialog appears:



Now to "stack" the crashes, click on the Display Options button. The Display Options dialog appears:



Assuming the crash layers are still active, click on the Create Stacks button. (If the crash layers are not active, set them active first.) The following dialog appears:



To clarify, what this is asking is whether you only want to stack on the total number of crashes at a site (the No option) or whether you want to stack based on some attribute within the database (e.g., crash severity or injury severity). In the former case, a point coverage and a line coverage representing total crashes at a point will be produced. In the latter case, these coverages as well as a point coverage and a line coverage representing the attributes (e.g., for crash severity: fatal, injury, pdo) will be produced.

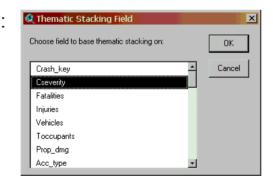
Again, BTW, theme = layer = coverage. Same thing.

Click Yes for this example. The computer becomes busy. It is determining what fields are available in the crash database for stacking. At length, the following dialog appears:



In this dialog are listed all the fields in all Active crash themes. Pick one. Currently the fields are listed. Future intent is to list the fields by name, such as Crash Severity instead of Cseverity. FYI...Cseverity = Crash Severity, Iseverity = Injury Severity. There are three tables available which define each of the fields listed here. Check under c:_avalas_documentation and find the A, B, and C Record format Excel files. Certain fields, such as Sobr_reslts, Prop_dmg, etc. should be avoided at this time as their values are continuous and thus could create long waits and meaningless stacks. This will be fixed.

Here, we'll pick Cseverity:



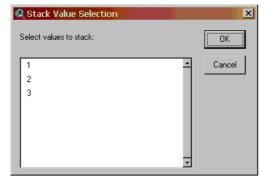
Click the OK button on this dialog.

The computer becomes busy. The first thing it is working on is the point theme representing total crashes at a particular geographic point. This should take little time but again is lengthened depending on the number of counties open, the number of years active, and the number of crashes selected. At the end of this stage, it will ask you if you want to export the theme:

[Seport?]

Would you like to export the point layer?

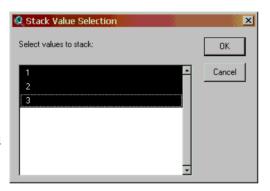
Let's assume, for now, you don't. Click No. (If you did want to it would ask you questions similar to those posed during report saving.) The next dialog that will appear is:



It would be helpful to know the definitions of these values at this point. Again, reference the A, B, C Record format Excel files under c:_avalas_documentation.

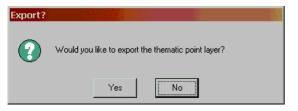
In the case of Crash Severity, 1 = Fatal, 2 = Injury, 3 = PDO. You can select any combination of these. Only those options available in the current Selection Set of the Active Themes will be listed.

Select all three:



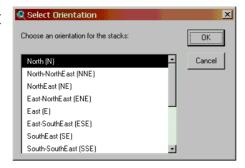
Click the OK button on this dialog.

The computer becomes busy again. It is now working on the point theme representing the crashes of each particular attribute (e.g., crash severity) at a particular geographic point. Of the stacking procedure, this process takes the longest time and again depends on the number of counties open, the number of years active, and the number of crashes selected. This might be a lengthy wait depending on those factors (e.g., If you pick a short section, such as what we're working with, the wait won't be too long. However, if you pick the entire Interstate 80 corridor across the state for 10 years, be prepared to go home and come back in the morning. BTW...this can be done.). At the end of this stage, it will ask you if you want to export the theme:



Again, let's assume, for now, you don't. Click No. (And, again, if you did want to it would ask you questions similar to those posed during report saving.)

The next dialog to appear is:



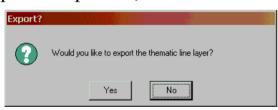
This allows the user to orient their stacks to fit the roadway length they are analyzing. The stack orientation is based on compass direction and allows 16 selections covering 360 degrees.

For our case, as our road is East-West, we could reasonably select North, North-NorthEast, or North-NorthWest. We'll stick with North. Click OK. The computer is briefly busy. It is creating the total crash line layer based on the total crash point layer. Upon completion, it'll ask about exporting the theme:



Again, let's assume, for now, you don't. Click No. (And, again, if you did want to it would ask you questions similar to those posed during report saving.)

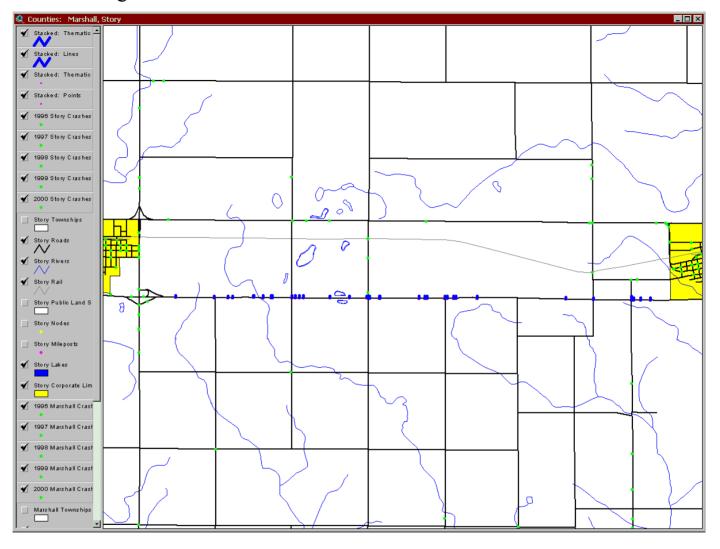
The computer is briefly busy. It is creating the crash attribute line layer based on the crash attribute crash layer. Upon completion, it'll ask about exporting the theme:



Again, let's assume, for now, you don't. Click No. (And, again, if you did want to it would ask you questions similar to those posed during report saving.)

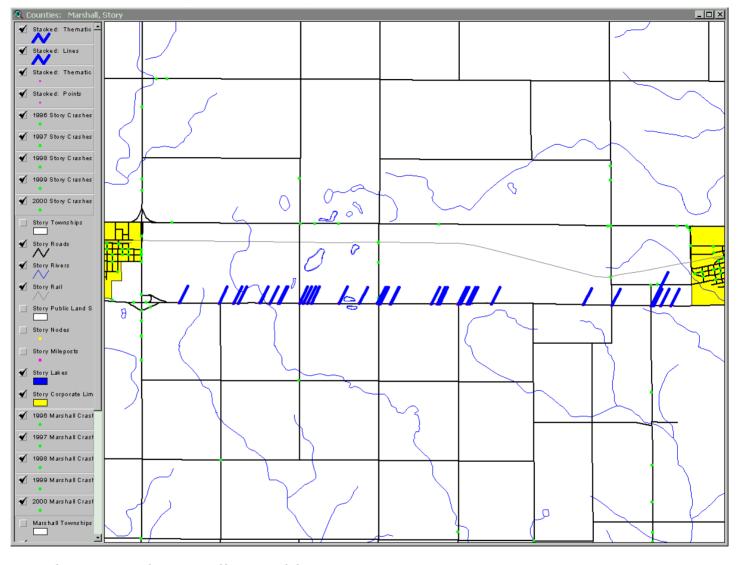
All of this adds to the "working" view by adding 4 themes, one for each type of layer mentioned during this process. They are named appropriately, are visible, and are active.

The results of all this stacking are:



However, it is obvious that the lines (represented by what look like blue dots here) are not long enough. This is due to the fact that we failed to zoom out first to accommodate for length of section. That is to say, by zooming out a couple, stacking, and then zooming back in we can influence the length of these lines, producing more meaningful and discernable results. That said, redoing the stacks is as simple as clicking on the Zoom Out button two or three times, then Create Stacks, then Zoom in two or three times.

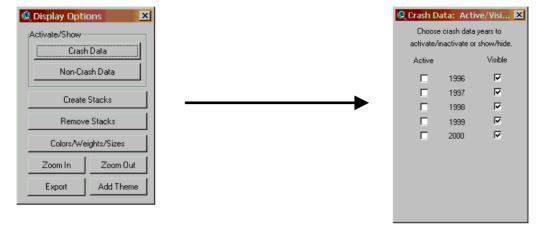
The results of this zooming out, stacking, and zooming in are:



As is obvious, these stacks are much more discernable.

These lines display the stacks for total crashes. To display the results of the thematic line stacking, first we can make all the other stack layers and the crash layers non-visible. Then we can concentrate on setting the thematic properties. Again, at this time you must do this yourself. Future versions will do it for you.

First, to set the crash layers non-visible (and non-active), from the Display Options dialog click on the Crash Data button within the Activate/Show control panel. This will display the Crash Date: Active/Visible dialog:



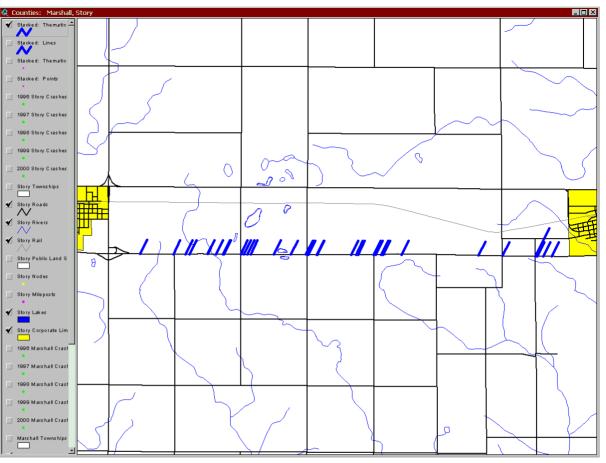
Click the Clear button on the Answers dialog. The Crash Data: Active/Visible dialog changes to:

Click OK on the Answers dialog. Then click on the << Back button.



Now, click on the checkmarks in front of the stacked layers other than the Thematically Stacked Lines layer. This will make them non-visible. Finally, click on the Thematically Stacked Lines layer to make it active.

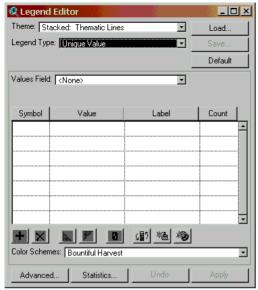
The View should now look like:



Double-click on the Thematic Lines Layer...the Legend Editor dialog appears:



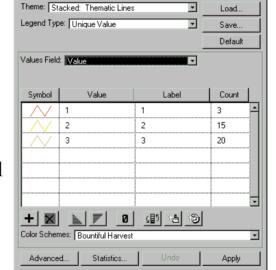
Click on the down arrow to the right of the Legend Type: box...to the right of the words Single Symbol. A series of choices will appear, one of which is Unique Value. Pick that. The Legend Editor dialog changes:



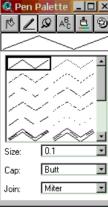
Now, click on the down arrow to the right of the Values Field: box...to the right of the word <None>. One of the choices will be Value. Pick that. The Legend Editor dialog will change

again:

Legend Editor



Now, double click on the crooked line symbol in front of the first value. The Pen Palette dialog opens:

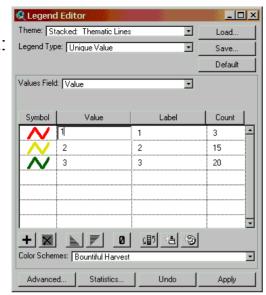


From here, you can set the line size to a suitable width, say 3.

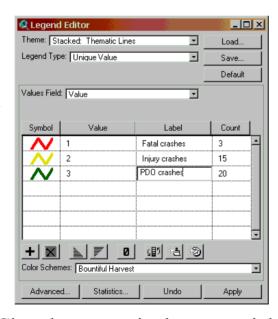
Then, switching to the Paint Brush symbol, you can set an appropriate color, say red for Fatal crashes.

Set the other values (2 and 3) to appropriate line sizes (probably 3) and colors, say orange and green.

The Legend Editor dialog upon completion:

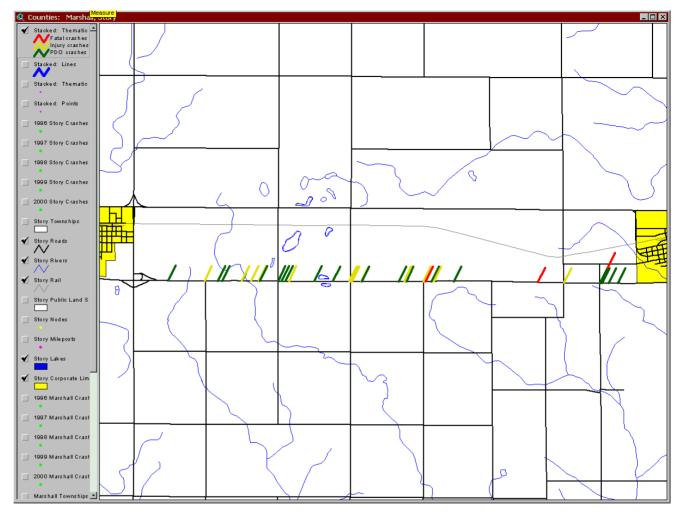


Now, click in the label column on the first value. Then type in Fatal crashes. Repeat this for the values of Injury crashes and PDO crashes. The Legend Editor box after:

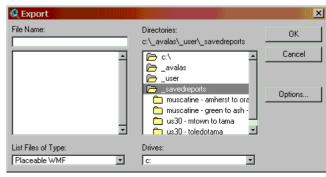


Click Apply and then click the Close button in the upper right. You might also have to close the Pen Palette dialog similarly.

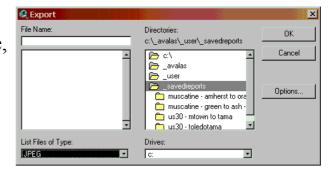
The final thematic View:



From here, you might export the view to a file in order to save it or bring it into a presentation software (e.g., MicroSoft's Powerpoint). To export the view, click the Export button on the Display Options dialog. The Export dialog appears:

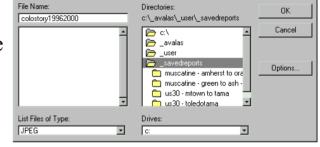


There are several choices for file types. We recommend JPEGs. To set the file type to this type, click on the arrow to the right of the List Files of Type box...to the right of the words Placeable WMF. For some reason, JPEGs is the last option. Scroll down to it, pick it. The Export dialog now:



Export

To place the file in a particular folder, navigate to that folder. For this example, we'll just stay here. Type in a suitable filename, something that indicates where you're at. We'll name the file colotostory19962000:



Click on the OK button on this dialog. The file is saved, in this case to c:\ avalas\ user\ savedreports\colostory19962000.jpg

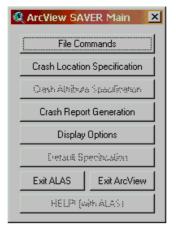
If you are done with the stacking layers and wish to remove them, click on the Remove Stacks button on the Display Options dialog.

Return to the Main dialog by clicking on the Main Dialog button on the Answers dialog.

Now, we'll cover some file management issues/capabilities. First, return to the Main dialog by clicking on the Main Dialog button on the Answers dialog:

Then click on the File Commands button. The File Commands dialog



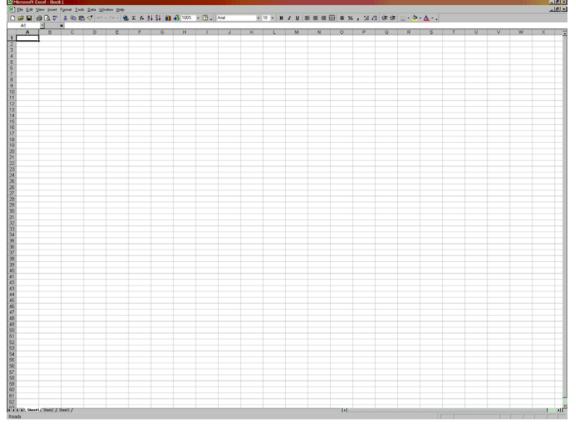


As you can see, there are many options available. New Map has been covered. Hide Map will close the current "working" View, leaving it in the project. Hide Map, if no map is open, will say "Show Map" instead. Close Map will delete the current "working" View from the project. Select Map allows selection of the "working" View from the list of Views in a project. Save Project allows saving of the project to a different name. Open project allows you to open an existing project...perhaps one that you've saved and want to work with further

Other button that may be enabled, depending on project circumstances, are the Tables buttons. The View Tables button produced attribute tables of the active themes in the "working" View. If you had produced reports and they still existed in the project, the Close Tables, Show/Hide Tables, and Save Tables buttons would be enabled. The Close Tables button allows the deletion, from the project, of a selection of tables. The Show/Hide Tables button alternates and either allows display of available tables or closing of available tables.

Assuming you've saved some reports, you can now open them up in a spreadsheet (e.g., Excel or Lotus 1-2-3). The manual will describe use of Excel. Lotus 1-2-3 should be similar. To illustrate, let's use the reports created as part of this manual. Remember, they are located in c:\ avalas\ user\ savedreports\. First, open

Excel, you'll get a blank Excel window: Market South Lond Formal Lond



Select File > Open from the menu options:



An Open File dialog appears:

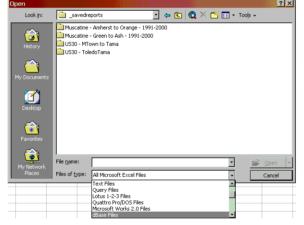


Navigate to c:_avalas_user_savedreports\:
Note that the same directories that appeared when we were saving the tables appear now.
These directories are only on my computer...they are saved results from my analyses. Also, note that no files appear in the c:_avalas_user_savedreports\ directory.

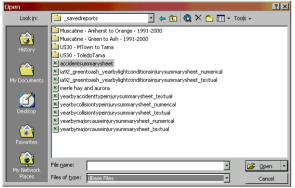


The tables that we saved are saved as dBASE tables. To display dBASE files, click on the downarrow to the the right of the Files of type: box...to the right of the words "All MicroSoft Excel Files". Then scroll down

to dBASE files and select this:



The Open dialog changes:

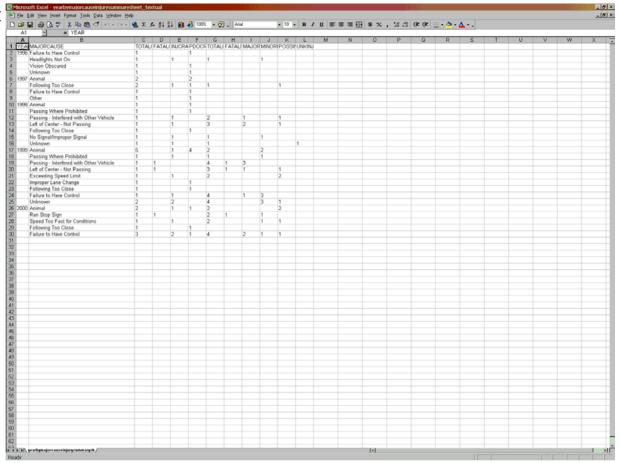


Choose the files desired...in our case "accidentsummarysheet", "yearbymajorcauseinjurysummarysheet_numerical", and "yearby majorcauseinjurysummarysheet textual":



Click the Open button.

All three files open, only one displays:

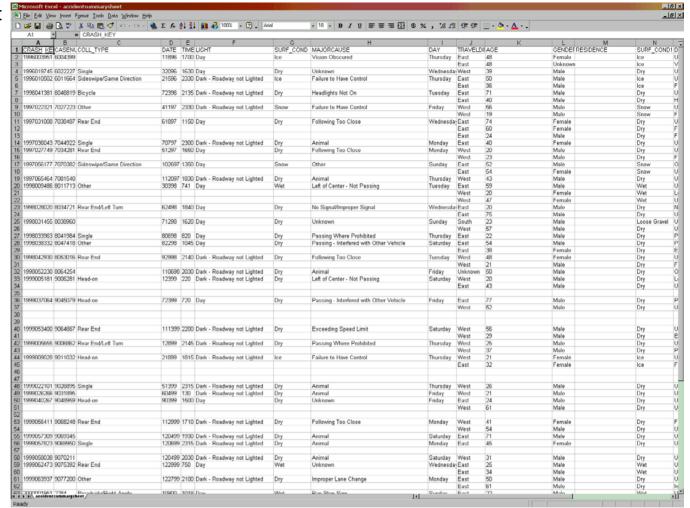


To switch between files, click on the Windows menu and pick the file to

Here we've switched to the Accident Summary Sheet.

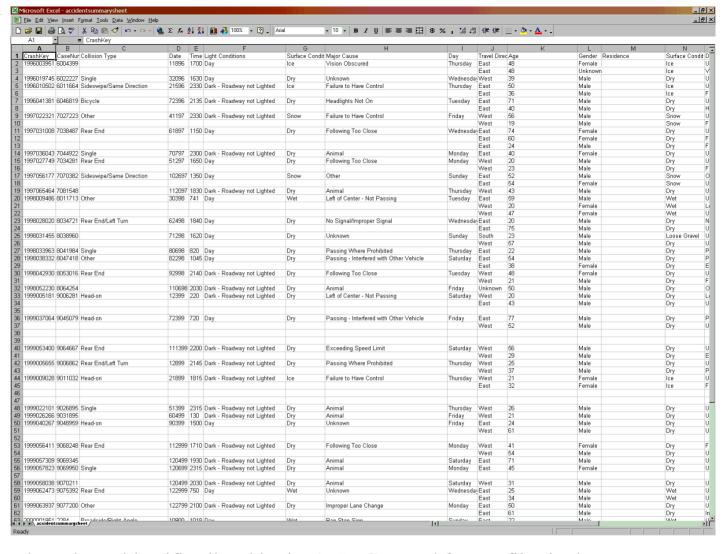
The Accident Summary Sheet:

Now, we will prepare the file for printing and providing to our bosses. We will need a title, location identification, years of analysis, and the like. Plus, we might as well provide more meaningful column titles. (BTW...the intent is to have future versions do this for you.)



First, to provide more meaningful column titles, just go to the column heading you wish to change and type in a new one. The Tab key and the Arrow keys are useful for moving around in a spreadsheet.

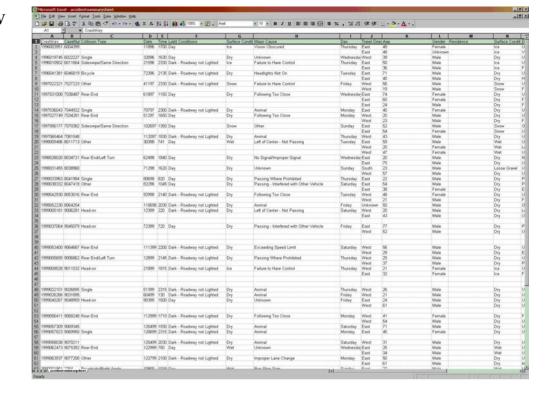
The column names as they appear after change:



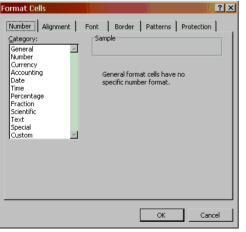
Mainly, these were based on the column identifies listed in the A, B, C record format files in the c:_avalas_documentation directory. You can use names that make sense to you (and your boss or customer).

Notice that some name overrun the width of the columns. There are multiple ways to handle this. First, you can simply widen the columns, but this may make some columns inefficiently wide. Second, you can make the columns wrap the text at word breaks. We'll look at both options.

First, highlight the first row (e.g., the row containing the column names):

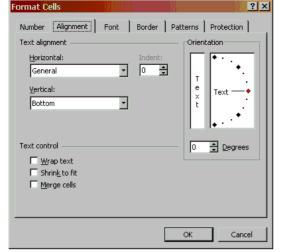


Then, from the menus choose Format > Cells. The Format Cells dialog appears:

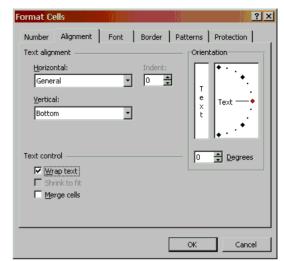


Notice that there are many tabs that present many options to you. Note, for example, that you could set the number format for a selection of cells to any of a number of options, from currency, to percent, to date, etc. Also, you can change fonts, borders, patterns, and alignments of selected cells. At the moment, however, we are focusing on alignment, so click on the Alignment tab.

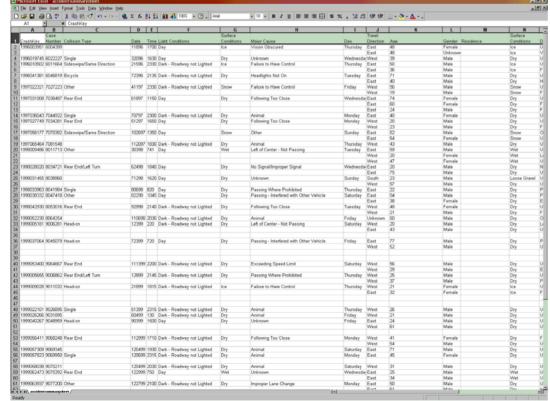
The Format Cells dialog changes:



Click in the Wrap text checkbox, putting a check there:

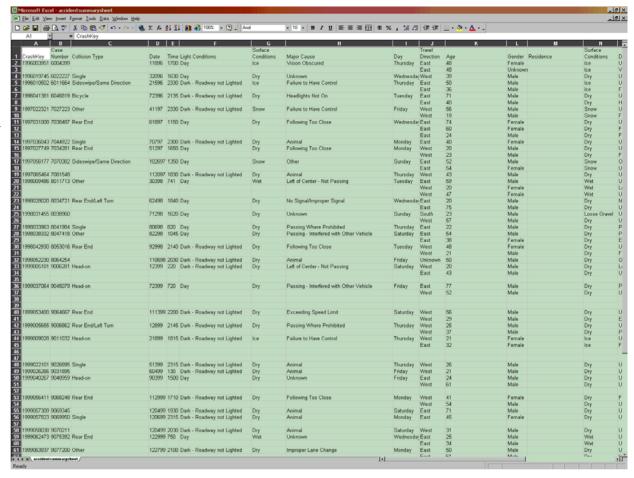


Click the OK button and the cells in the first row change:



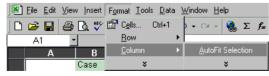
Now the rows wrap but the column widths are still too large.

Now, set the spreadsheet cells all to selected. Do this by clicking on the blank square above the "1" for the first row and to the left of the "A" for the first column. All cells should appear selected now:



Then, from the menu, select Format >

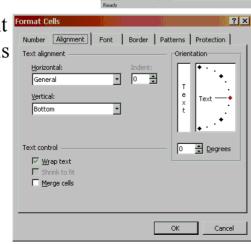
Column > Autofit Selection:



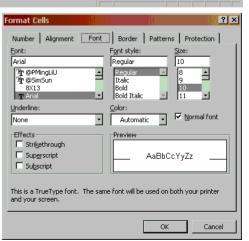
The column widths change to fit the widest values in their columns:



You can also set the Font and Font Size for all cells by selecting, from the menu, Format > Cells:



Then choose the Font tab and set as you desire:



Click OK when done.

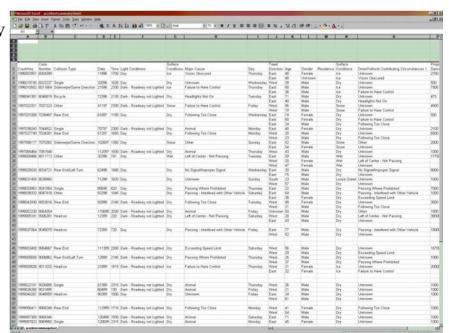
Now, we'll insert 5 rows in order to create room for header information. So, select the first 5 rows by clicking on the "1" to the left and dragging through the "5":

| Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description | Description |

Then, from the menu, select Insert > Rows:



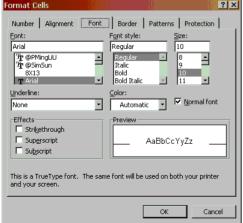
The first 5 rows are now blank, with the other rows all forced down:

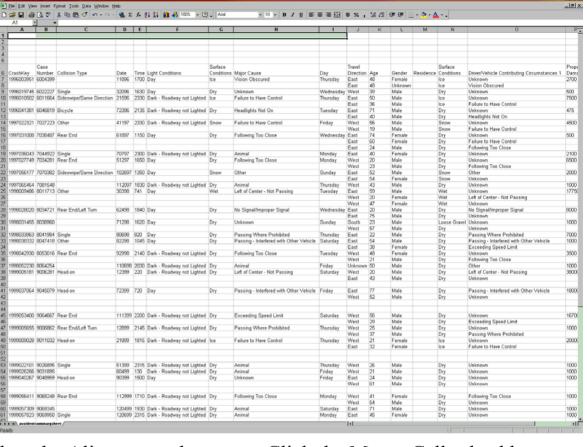


Now, to make our headers nice and fit across the screen, we can merge the header row columns. First, select, within the first row, the columns corresponding to the crashwide information:

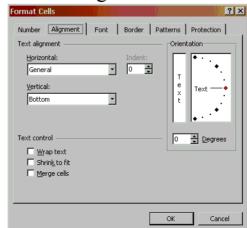
Now, from the menu, choose Format > Cells. The Format Cells dialog

appears:





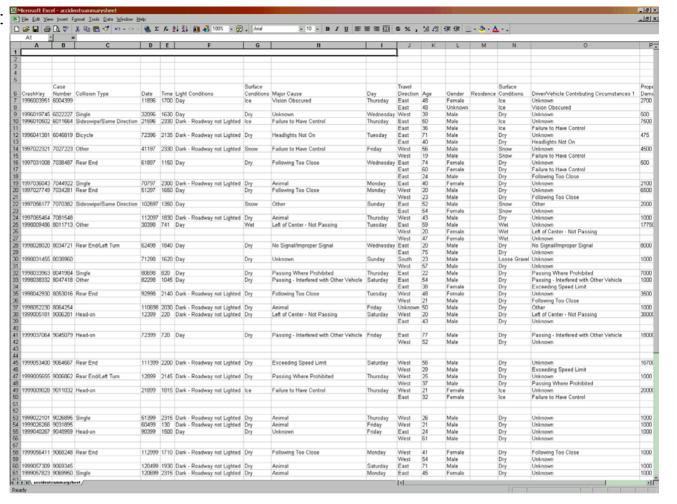
Select the Alignment tab:



Click the Merge Cells checkbox:

Format Co	ells			3))	? :		
Number	Alignment	Font	Border	Patterns	Protection		
Text align	ment ———			— Crien	entation		
Horizo Gener	ral al:	•	Indent:	T e ×	↑		
Botto Text cont	rol ———			_ [t	◆ Degrees		
☐ Shi	ap text rin <u>k</u> to fit irge cells						
				OK	Cancel		

Click OK. The cells merge:



Repeat this for rows 2 and 3. Select row 2 and, in this case, columns A through I. Then hold the CTRL key down and tap the Y key. This repeats the last command performed (i.e., Merge Cells). Then do the same for row 3.

Now, we can type in header information. For our example, type the following on each line:

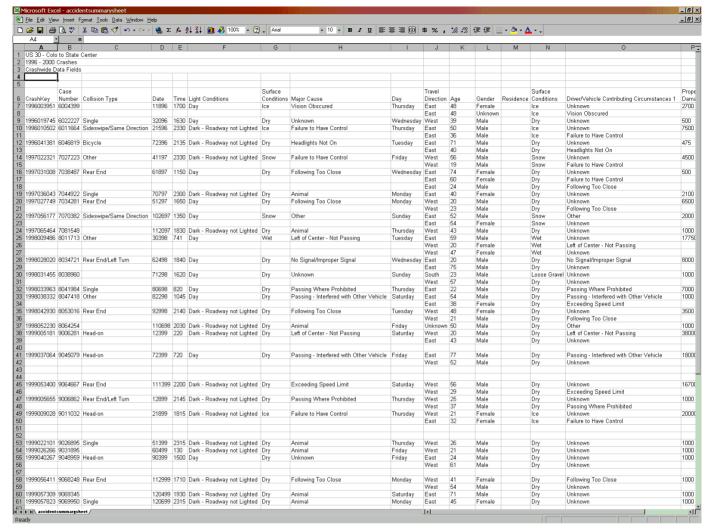
Row 1: US 30 – Colo to State Center

Row 2: 1996 – 2000 Crashes

Row 3: Crashwide Data Fields

Note: You can type in whatever you want. These are suggestions only.

The spreadsheet now:



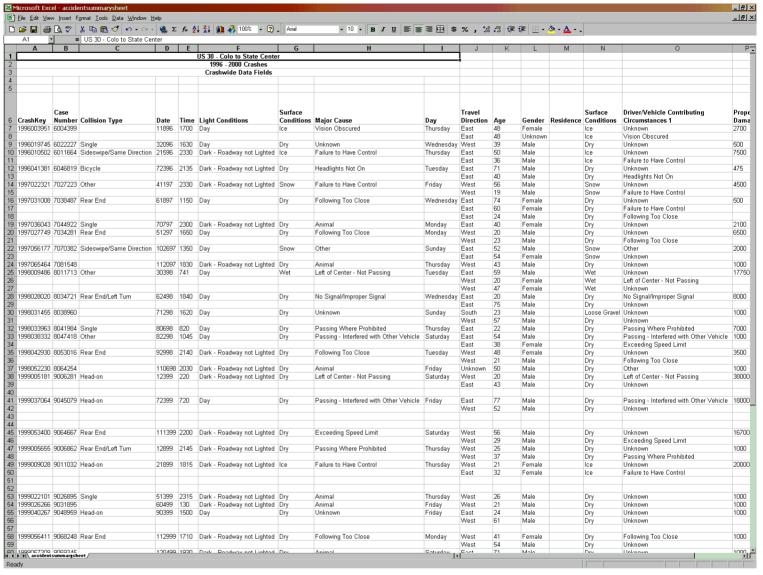
To center and bold these cells, select them all then push the Center button and then the Bold vou could repeat this on the column header row as well. Select the entire row, by clicking on the 6 to the left and then Center and Bold. You might then have to resize some of the cells, as bolding text makes it bigger and some of the column headings might look odd.

The spreadsheet now: Microsoft Excel - accidentsummarysheet

Microsoft Excel - accidentsummarysheet

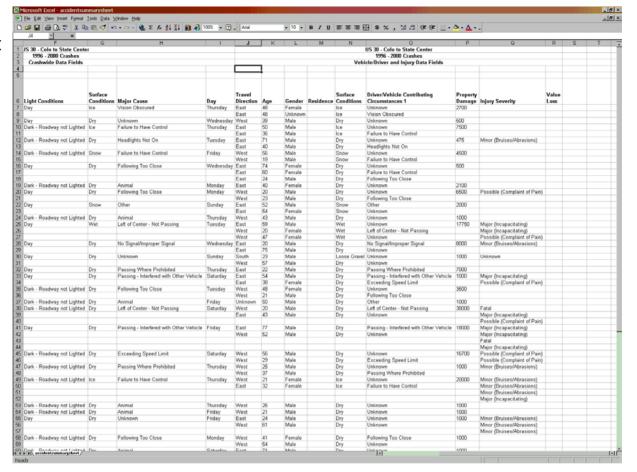
Microsoft Excel - accidentsummarysheet

Microsoft Excel - accidentsummarysheet

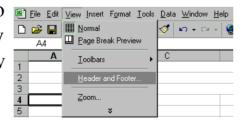


Repeat the header information for the Vehicle/Driver information and the Injury information, if desired. The reason you might do so is that not all of this information will likely fit on an 8.5 x 11 sheet of paper. Of course, if you never print this information it might not matter.

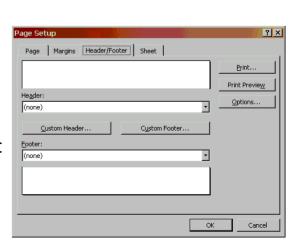
The spreadsheet with all header information:



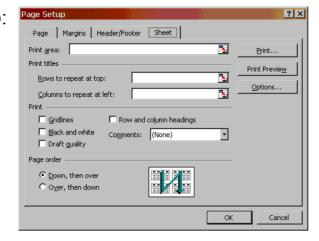
Finally, to set the header rows so that they print at the top of every page, from the menu select View > Header and Footer:



The Page Setup dialog appears:



Click on the Sheet tab:



Click on the button to the right of the Rows to repeat at top: box. A small dialog

appears:

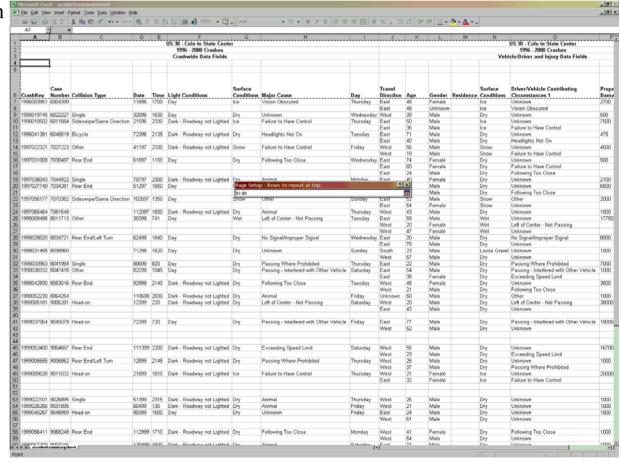


Select the first six rows by clicking on the "1" and dragging to the "6". A faint, broken line appears around the selection area and the small dialog updates:

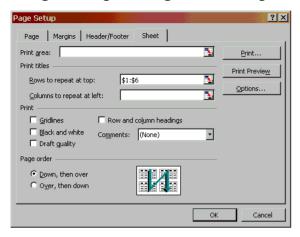
and:

Page Setup - Rows to repeat at top: ? × \$1:\$6 ₽

Click the putton.



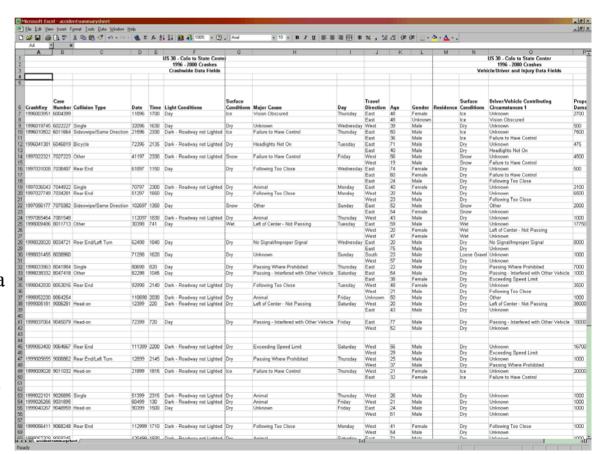
The Page Setup dialog returns, updated:



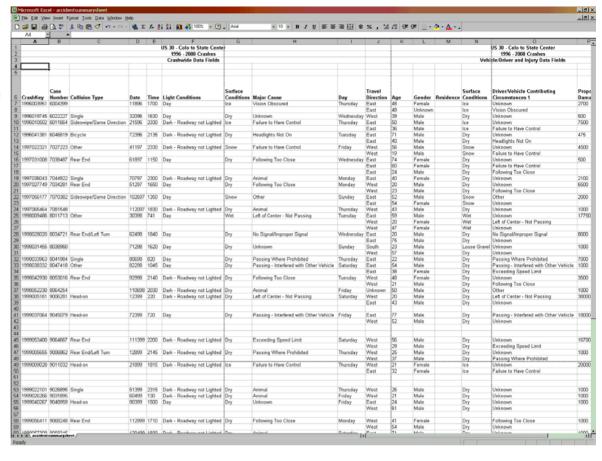
Click OK.

The spreadsheet now has print lines indicated (thin vertical lines):

We also should have the first two columns print on each sheet so that we can tie the Vehicle/Driver and Injury data to the Crashwide data. To do this, use the Page Setup dialog (above) but set the Columns to repeat at left: value to equal "\$A:\$B". You might have to type this in as the merge cells force the option "\$A:\$I".



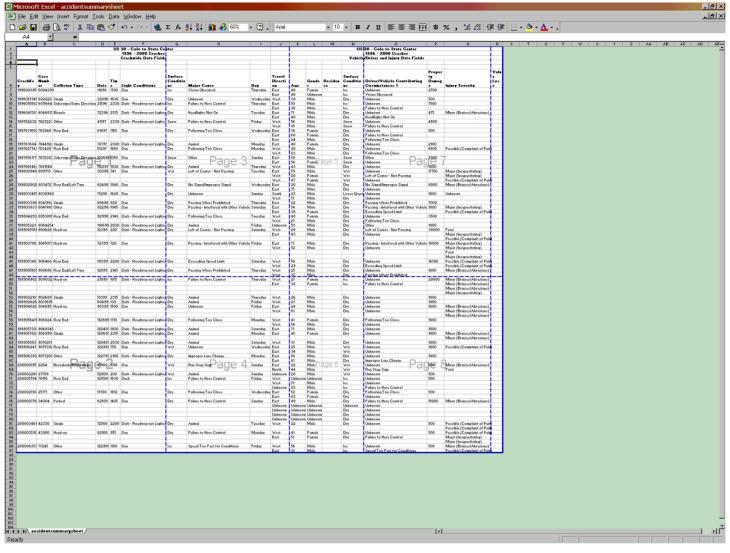
Here the print lines can be seen between columns F and G, columns J and K, and columns N and O. We'd rather have them between columns I and J and at the far right column.



To reset the print lines, from the menu choose View > Page Break Preview:

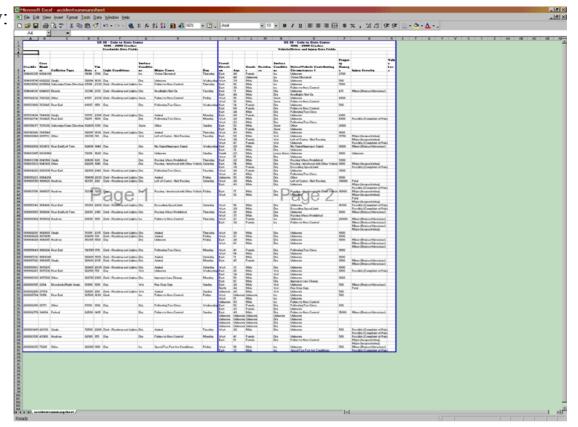


The Page Break Preview: The Page Break Preview:

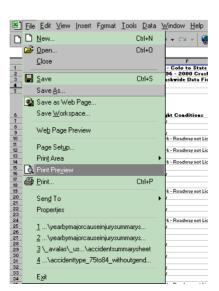


Using the mouse, select the vertical lines and move them to the desired positions: between columns I and J and to the right of column R. The Page Break Preview should end up only two pages wide.

Updated Page Break Preview:

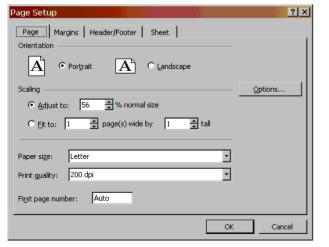


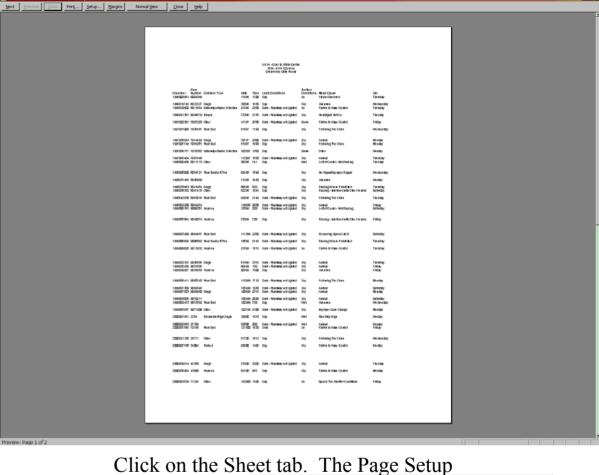
Now, from the menu, choose File, Print Preview:



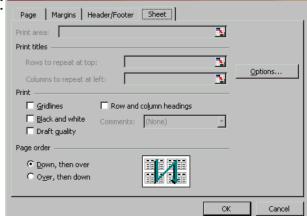
The resultant screen:

Click on the Setup... button. The Page Setup dialog appears:



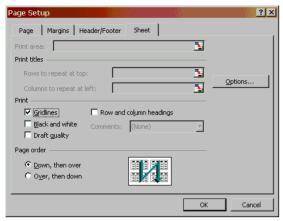


Click on the Sheet tab. The Page Setup dialog changes:

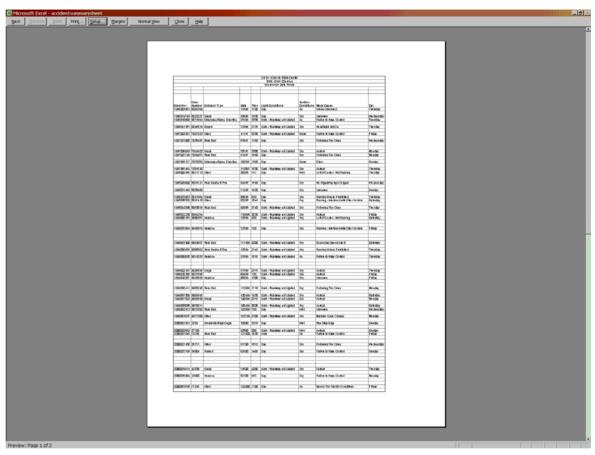


? ×

Click on the Gridlines checkbox:



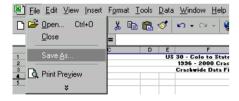
Click the OK button. The Page Setup dialog disappears and gridlines appear on the spreadsheet:



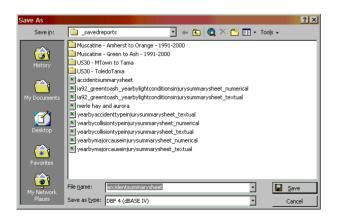
Use the scroll bar to go to the next page.

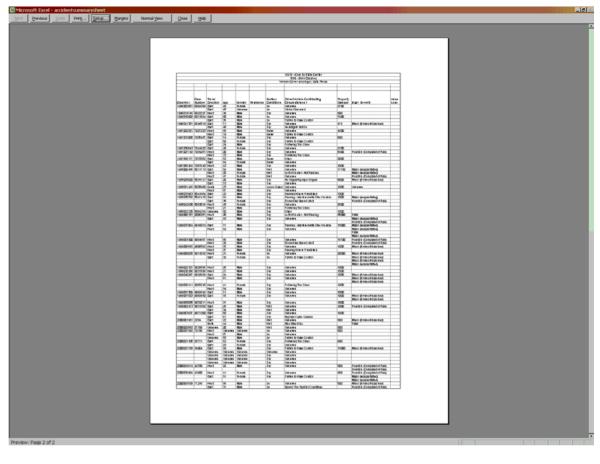
The second page also has gridlines. Additionally, the Crash Key and Case Number columns appear on the left of the page...connecting this page to the previous:

Click on the Close button. The spreadsheet will revert to its normal view. Then click on File > Save As:

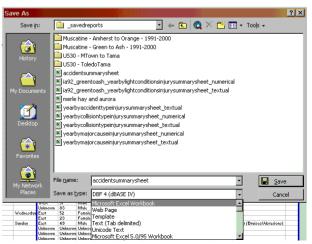


The Save As dialog appears:





Chance the Save as type option from dBASE to MicroSoft Excel Workbook:



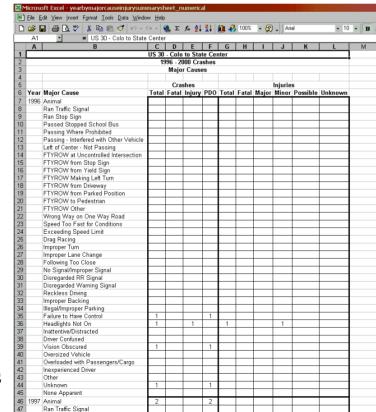
Name as you please and Save:



Print if you wish.

For the "year by" reports, construct headers, column names, etc. in much the same way...fitting the titles and information to these files:

Numerical:



Textual:

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	A1 US 30 - Colo to State Center											
	Α	В	С	D	E	F	G	Н		J	K	L
1					to Sta		nter					
2	1996 - 2000 Crashes											
3	Major Causes											
4	Crashes Injuries											
6	Vaar	Major Cause	Total			nno	Total	Fatal	Major			Unknown
7		Failure to Have Control	10(a)	ratai	injury	1	TULA	ratai	Major	WIIIIOI	russibie	Ulikiluwii
8	1996	Headlights Not On	+		1	-	1			1		
9		Vision Obscured	H	_	-	1		_		-		
ອ 1∩		Unknown	+			+	_					
11	1007	Animal	2			2	-					_
12	1337	Following Too Close	2		1	1	1				1	
13		Failure to Have Control	1		-	1					- '	
14		Other	i i			1						
15	1000	Animal	1			1	_	_				
16	1550	Passing Where Prohibited	<u> </u>			1	_	_				
17		Passing - Interfered with Other Vehicle	ΙĖ		1	<u> </u>	2		1		1	
18		Left of Center - Not Passing	T T		1		3		2		1	
19		Following Too Close	1			1	_		_			
20		No Signal/Improper Signal	1		1		1			1		
21		Unknown	1		1		1					1
22	1999	Animal	5		1	4	2			2		
23		Passing Where Prohibited	1		1	_	1			1		
24		Passing - Interfered with Other Vehicle	1	1			4	1	3			
25		Left of Center - Not Passing	1	1			3	1	1		1	
26		Exceeding Speed Limit	1		1		2				2	
27		Improper Lane Change	1			1						
28		Following Too Close	1			1						
29		Failure to Have Control	1		1		4		1	3		
30		Unknown	2		2		4			3	1	
31	2000	Animal	2		1	1	2				2	
32		Ran Stop Sign	1	1			2	1		1		
33		Speed Too Fast for Conditions	1		1		2			1	1	
34		Following Too Close	1			1						
35		Failure to Have Control	3	l	2	1 1	4		1 2	1 1	1 1	1

FYI, efforts are underway to make this a much easier process.

- Opening exported views in Powerpoint...from opening them thru prettifying them and saving them
- Opening exported themes
- Prettifying views within ArcView (autolabelling, labelling, etc.)
- Setting up a shortcut...updating it
- Short list of SAVER operations, step by step